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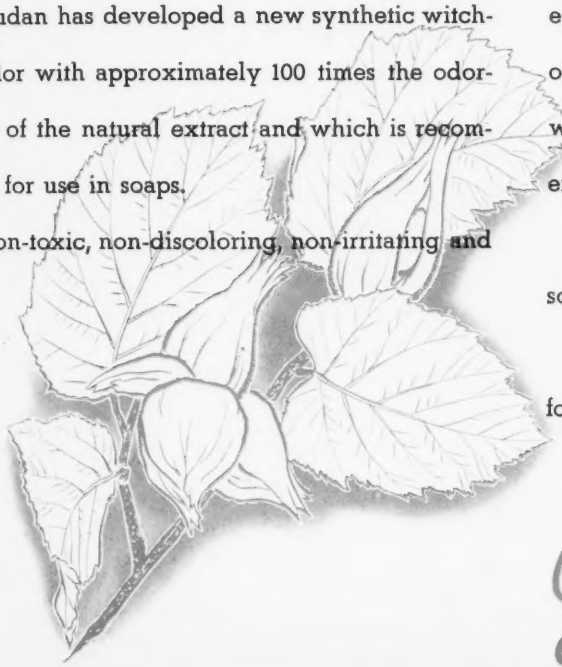

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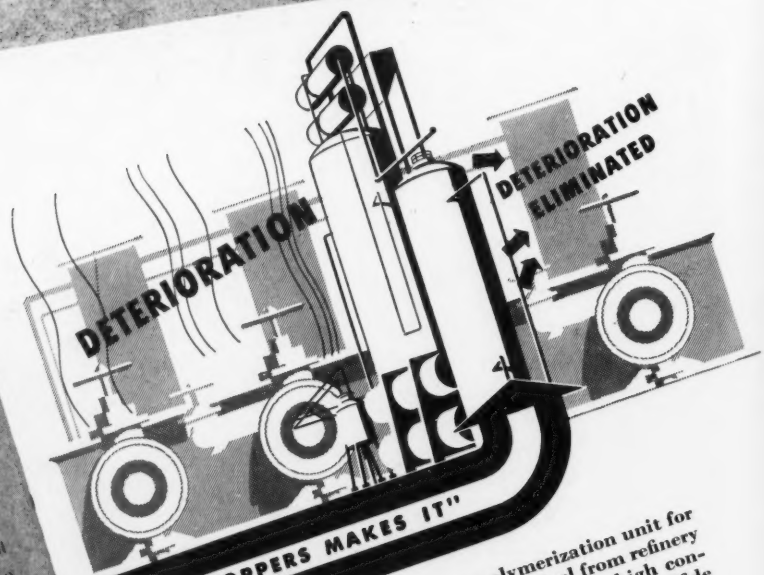

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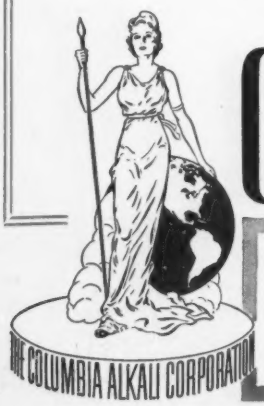

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Soap and Sanitary Chemicals

Volume XIV
Number 8

AUGUST
1938

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MAC NAIR-DORLAND COMPANY, INC.
254 WEST 31st STREET NEW YORK, N. Y.

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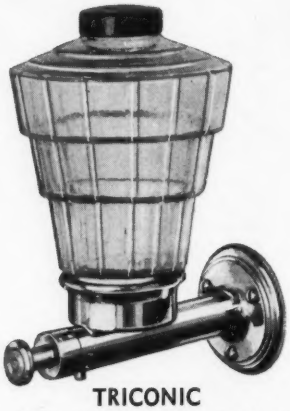

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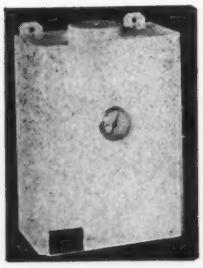

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1938 BLUE BOOK

Free with a SOAP Subscription

Contents

Reference Section

This section has again been materially expanded, reflecting subscribers' expressions of approval. Contents of the 1938 edition include: reference articles on the following subjects: Soap Dispensers —a complete review of all types of dispensers available for liquid and powdered toilet soap, detailing the good points and shortcomings of each; The Manufacture of Emulsion Floor Waxes; White Shoe Cleaners,—a review of the various types on the market with instructions for their preparation; Household Ammonia, — instructions on preparation, complete with dilution tables; Insecticide Perfuming,—comments on suitable and unsuitable odors for fly sprays; Peet-Grady Test,—first publication of the new revised method for insecticide testing; F. D. A. Disinfectant Testing Method; Specifications of the National Association of Insecticide and Disinfectant Manufacturers for insecticides and disinfectants; U. S. Specifications for soaps, polishes, waxes, cleaners, chemicals, etc.; Oil and Fat Tariff and Excise Rates; an index to SOAP for the Years 1934, 1935, 1936 and 1937 (makes it easy to locate valuable technical information); Technical Charts and Tables; Directory of Association Officers.

Buyer's Guide

The Buyer's Guide contains a list of everything readers of SOAP buy—raw materials of all kinds, machinery, packaging materials and bulk soaps, sanitary products and sanitary accessories—with a comprehensive list of leading suppliers of each item. This is distinctly not an ordinary buyer's guide, cluttered up with names of dealers, branch offices, etc., and with advertisers indiscriminately listed. We have strived in each case to list only first hands—actual primary sources of supply. The BLUE BOOK costs SOAP subscribers nothing. A limited number of additional copies are available. If you want one your check for $3.00 (Foreign $4.00) will cover a subscription to SOAP for one year and will insure your receiving a BLUE BOOK by return mail.

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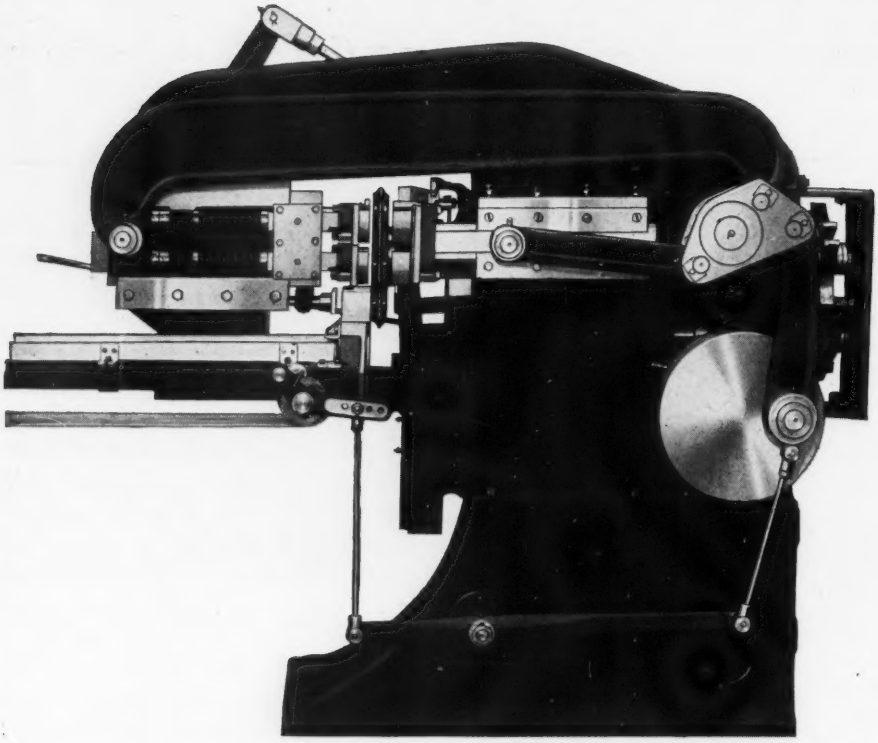

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As the Editor sees it..

FROM the look of things, the million-and-a-quarter children in the schools of New York City will not, as we had hoped, fall heir to a supply of free soap and paper towels in school washrooms next year. The cost would have approximated $135,000 or twelve cents per child per year. And from the stew of red hot debate in which the Board of Education found itself in considering this proposal, one would have thought that the cost were going to be twelve dollars per pupil. The debate ran the gamut of all the old hackneyed arguments,—the kids would stuff up the plumbing with the towels, they would rip the soap and towel fixtures off the wall, heave them about, tear them apart, and maybe even steal them,—soap and towels are costly and dangerous weapons to place in the hands of irresponsible school children. So it went,—and on the other side, that good age-old question, "why teach children to be clean and tidy citizens and then have no facilities for practice in the schools?"

The New York *Times* used the expressions "wholly revolutionary idea" and "this startling innovation" in commenting on the plan, but concluded ". . . for all its novelty, sounds sensible and long overdue." Novelty! Revolutionary! Innovation! And to think that only several hundred cities and other communities throughout the country have been supplying their schools with free soap and in some cases towels for years past, —and apparently their plumbing still functions. This is no novelty, *Mr. Times.* New York is just a decade or two behind the parade. And when we stop to think of the thousands of dollars frittered away every year in the school system in teaching all sorts of flubdub and tripe, we cannot help but be amused by all this fuss over soap and towels.

That the Board of Education of America's so-called "wonder city" turned down the proposal is no surprise to us. The big town still has lots to learn from other American communities, particularly in the matter of its schools.

JUST when the rank and file of the soap industry had begun to believe that the spray soap patent situation had been definitely settled and closed up for good, there comes a decision from a United States Court in the Southern District of Indiana against a large soaper for patent infringement. The patent on which the suit was based claims an invention date prior to that listed in the Lamont patent under which several of the large manufacturers are operating and over which a bitter contest was fought through the courts for several years. And it was as a result of this court battle that not so many months ago, something like five million dollars changed hands among the large soapers as a settlement for damages resulting from what a high Federal court held to be infringement.

Now, up comes the obscure owner of another patent with a court decision which in effect states that those who recently collected millions in damages, are themselves infringers. Truly, if the district court decision is one which will stand up in the higher courts, it bids fair to scramble well the entire spray soap situation. That is the nub of the whole thing. Will the decision stand up? If it does, what of the validity of the Lamont patent and the five million which changed hands in the court fight under it? To state that this whole matter is pregnant with possibilities, is to put it mildly indeed.

AT THE hearing in Washington last month before the Public Contracts Board, the soap industry had a very able case presented for it. Taking the findings of the U. S. Bureau of Labor Statistics as a starting point, those in charge of presenting the industry's case pulled these figures apart for the board in an attempt to determine

accurately just what does constitute the prevailing minimum wage for the industry,—which was what the board was seeking to determine for purposes of operation under the Walsh-Healey Act.

It was argued first that a general average of pay of all workers in the industry is deceptive. If prevailing *minimums* are the object of the study, it was pointed out, these would normally be found by analyzing wages of unskilled rather than skilled workers. And in discovering these minimums, it was argued further, the searchers should give particular weight to the small rather than the large companies. The larger companies employ a substantial number of the industry's total, of course, but a far greater number of firms are affected by the wages which the small plant operator pays. Proceeding along these lines it was indicated that the prevailing minimum wage in the industry is in the neighborhood of 40c per hour. Some employees in the soap industry, it was pointed out, work at light tasks and are normally paid at a lower rate. A tolerance of 7½c per hour was asked for such employees.

What the decision of the board will be will not be known for several weeks or months, perhaps. That the board will give consideration to the problems of the smaller manufacturer was indicated, however, in some of the questions asked by board members. A double set of wage rates,—one for small and one for large units of the industry—seems to be a distinct possibility.

THE longer term trend in the fat and oil markets, that is the trend between now and early 1939, is likely to be upward. Discussion of the current situation and the outlook in the trade reveals that a general rise of possibly two cents per pound throughout the list by next January, would not be any great surprise. A softening of the market during August appears to be anticipated in one or two quarters, with the uptrend getting under way seriously in September. The outlook is for a somewhat heavier production of fats and oils over the balance of the year, but with a resumption of general business in the Fall, the effect of larger supplies is expected to be more than offset by heavier demand.

Many soapers are standing at the crossroads today as far as the raw material situation is concerned. They are uncertain as to which way to turn, even though in checking back over the past two or three years, they admit that the present market looks like the spot to anticipate some future requirements. And the fact that producers are apparently unwilling to contract any great distance ahead, adds another element of uncertainty. On the whole, we should be inclined to interpret this latter as a bullish factor rather than anything else. Although anything can happen in the oil and fat markets, as everybody knows from past experience, we feel that there is greater safety in not being too short of raw materials during the next five or six months.

NOW is not too early to start thinking about what is going to happen in 1939 in the way of plain and fancy state legislation which will have a direct bearing on business. All told, forty-six state legislatures will convene next year,—not to mention that the Congress of the United States will also be in session. That a great many states are going to emulate the example of Washington and go in for all sorts of so-called "social" legislation seems to be a foregoing conclusion. That is the direction in which the pendulum is swinging right now. That the new legislation will leave unscathed both the farmers and the legal profession is also likely,—for most of the voters in most of our states are farmers and most of those who get themselves elected to legislatures are lawyers on the way up the political ladder.

American business, both large and small, being the fattest and richest of all the political lemons, bids fair to be well squeezed of juice in the course of events. State trade mark laws and mandatory registration of products will be among the legislative leaders,—all at a "nominal" fee. State labor laws and regulations, and a host of others are all going to take their toll. In some cases, there are going to be sharp conflicts, confusion and chaos. There is little hope that business will be able to buck the tide successfully. But business can prepare now to gird up its loins and organize to hold back the anticipated flood. Organization for legislative purposes should play the leading role in the activities of trade associations over the balance of this year. If business people do not get busy and organize for defense of their rights, nobody else is going to do it for them.

Ewing-Galloway.

HAND PASTE SOAPS

A discussion of composition and quality in relation to the market where these soaps are sold

By Herbert J. Dennison

OF all the soap products on the market today, the average abrasive hand paste is probably manufactured with less attention to scientific detail than anything else. The reason is that there are hundreds and hundreds of brands of hand paste made and sold locally by small firms and individuals who do not have the knowledge or the time to give to correct composition or manufacturing method. Usually these products are based blindly on a formula whose background and origin are questionable to begin with. Then, there is always the temptation to stretch the formula, increasing the water content or the content of abrasive or filler, and cutting down on the soap. The greater the pressure of competition and the demand for lower prices, the greater is the urge to make the product cheaper and ever cheaper.

Thus came the decline in the quality of innumerable hand pastes. To the small minority of better-known brands, particularly those sold and advertised over wide areas, went the job of maintaining quality. Most of these latter succeeded in holding up their quality, although they have had a rather tough time of it in competition with some of the cheap locally-made products. To the average mechanic in garage or machine shop, any can of hand paste looks like any other at first glance. During and after use, the better product will naturally show up to advantage if the mechanic will take the trouble to note the superiority or inferiority of one product as compared to another. But, mechanics are notoriously careless and slipshod as a group in their

observations, and they are even more so in the manner in which they use a hand soap to clean up at quitting time. Anybody who has ever stood near the wash basins in the factory and watched the manner in which hands are cleaned needs no further verification of this latter fact. Some men will dip out a lump of paste the size of an egg and lose most of it in the basin, while another will use a small pinch insufficient to work up a lather.

Because of the way in which these paste soaps are used, quality differences may go unnoticed for a long time. A sharp difference in price, however, is something which always stands out, and if a mechanic believes that all hand pastes are alike, he will naturally buy that which is lowest in price. It will not be until he notices,—if he ever does,—that the cheap products are very poor in detergency, or cause his hands to chap and crack, that he will be inclined to pay a higher price for a better soap. Undoubtedly, this feature of the hand soap market is what has made possible the survival of hundreds of poor products, and still does.

Any suggestion for improvement of hand soap delivery has the ever-present bogey of low cost staring it right in the face. Back of most of the poor quality products has been the urge to cut costs. This is why their quality is low. As a consequence, to turn about and build up quality means to boost costs at the same time, and this is the one thing which the average small manufacturer feels he cannot do while his thoughts center on competition and price. Whether this may be accomplished eventually remains to be seen. With the case of decline in the market for hard auto soap in mind, there seems to be a very pointed argument as to why the quality of hand pastes should receive more consideration.

In not all cases is the poor quality of hand soaps due to efforts to reduce costs. Some small so-called manufacturers just do not know how to produce the right product no matter what their raw materials may be. In fact, after discussing hand paste with various small producers, the conclusion is drawn that at least two out of every three people making these soaps have no license to be in the business. That their products continue to remain on the market appears to be due mostly to the absence of anything resembling discrimination among the people who buy the products. and to the fact that they make up in selling pressure what their soap lacks in quality.

Hardly a hand paste is sold by peddlers among the workmen of factories, mines, garages, which does not lay claims to some kind of miraculous powers in the way of grime removal. Some claim medicinal and healing properties. Dozens of products based on "secret formulas," usually "smuggled" out of Germany, or Austria,—if the song-and-dance which goes with the soap is to be believed,—have been offered. Those which have been examined, as a rule are just another hand paste, in most cases not as good as the run-of-the-mine soaps on the market. A few have been different, have carried some added ingredient which, although it may not in fact make the soap any better as a hand cleaner, does give a very fine hook upon which to hang a selling harangue. All of which leads up to the point that with a good-grade standard hand paste and a small amount of imagination on the part of the manufacturer, sales might very easily be increased considerably. But after reviewing the hand paste situation of the past five or ten years,—excepting a few bright spots among the manufacturers,—one is almost bound to conclude that this is too much to hope for.

A GOOD hand soap should be a uniform firm paste, one which can be readily scooped in small quantities from the can. It should not be a watery mixture which looks like curded milk; neither should it resemble a chunk of unground pumice after the top of the can has been off for a few hours. The abrasive approximating one-third of the product, should be fine and uniform,—not a mixture of small pebbles and gravel, which is the impression one secures from some hand pastes. It should lather quickly and freely when used in the average small dabs as ordinarily scooped from the can. This latter means a sufficient soap content,—and the right kind of soap. It should not dry the hands to too great an extent,—all hand pastes, particularly in the winter time, have a distinct tendency to remove too much natural oil and dry out the skin,—which means that it should not be loaded with an excess of alkaline salts. At the same time, if it is too mild, it will not do a good hand-cleaning job,—so a happy medium must be found. These are a few of the general rules with which too many hand paste makers appear *not* to be familiar.

First, consider the soap content of a hand paste. Preferably, it should be a tallow-coconut soap which means sufficient lather of proper body,—that is if enough soap is used in the paste. The problem is sometimes to get the tallow-coco chip and to get it at a price which hand soap makers want to pay. Nevertheless, some content of coconut oil soap is essential in a hand paste, and even a straight coconut soap might be used, and is used in some cases. From the practical angle of the small manufacturer, the chip which he uses for his soap base must be readily available and it must be cheap. This is the reason evidently for the wide selection of ordinary laundry chip. Some use white chip and others use yellow rosin chip. Of the two, the latter appears preferable because it ordinarily lathers better than the white chip soap under the conditions where used in a hand soap.

At any rate, the aim should be for more lather, because users of hand paste like to see a good lather. Too many soaps of this kind do not lather well, some giving merely an abrasive slime on the hands. Furthermore, if ingredients are to be added to the soap which tend to reduce the lather, the soap content should be designed to take this into consideration. For this reason, a chip containing coconut has its good points.

The incorporation of a fairly

high percentage of rosin soap in a hand paste also has possibilities, particularly in reducing costs under some circumstances, inasmuch as the soft, sticky character of a rosin soap does not have the drawbacks which it does when used to excess in hard laundry soaps.

In a good paste, the aim should be to hold the total anyhdrous soap content between fifteen and twenty per cent. This allows sufficient soap for a proper lather and also for the effects of added products which tend to reduce the lather, such as petrolatum, mineral oil, and the like. In contrast to this figure, the U. S. Government Specification for hand paste allows a latitude of eight per cent minimum and sixteen per cent maximum anhydrous soap content. (In dry powdered hand soap, the Government has a minimum of 17 per cent anhydrous soap.)

In calculating soap content for hand paste, sight should not be lost of the fact that chip soap as purchased should be calculated at about 85 per cent dry soap basis which is about the anhydrous soap content. This is particularly important for those who are making a product to meet Government or other specifications and who plan on incorporating only the minimum soap requirement. Otherwise, anhydrous soap may drop below the minimum allowed and this will mean rejected shipments.

THE abrasive content of a hand soap is important. It should not be too coarse or rough, and it should be uniform. It should be distributed evenly throughout the soap mass,—and this means in the can when the product is opened for use. In the removal of grime from the hands with an abrasive, a certain portion of the skin is actually scraped off by the cutting action of the sand or pumice. Minute cuts and scratches are made in the skin under any circumstances, and where the abrasive is too coarse or too rough, the damage to the skin is liable to result in dire consequences, laying it open to subsequent infection. There is a possibility that some connection may exist between the repeated scratching and breaking of the outer skin by coarse abrasives, and epidemics of boils and other skin troubles in machine shops and garages. This is an argument which has been advanced in favor of sawdust, marble dust, chalk, and other products of only slight abrasive action for use in place of the sand, pumice, and silica. However, the heroic action of the more strongly abrasive materials is essential if deep-seated grime is to be removed.

Experience indicates that mechanics want a strong cleanser, one that cuts the dirt right out, and will not be bothered on the whole with the milder products which are not as effective or require two or more applications to get the hands clean. Therefore, the common abrasives are fine sand, pumice, and to a lesser extent silica. Ordinarily, sawdust and marble dust are classified as fillers and cheapeners, but they do have some abrasive action and also tend to reduce the action of the sand or pumice by merely diluting the proportion of the latter present in relation to the entire mass. The content of mineral abrasive should run around one-third of the total weight. Some pastes run up as high as sixty per cent. The Government Specifications put a top limit of fifty per cent on the product it buys,—and also a bottom limit of twenty-five per cent.

The soap, abrasive, and water are the three main ingredients of the paste and go to make up at least ninety per cent of its total weight. Not so important are reasonable variations in these three main constituents, but the physical form in which they go into the can and in which they reach the user are very important. Packed hot and fluid, too often the sand or pumice settle out in a hard mass on the bottom of the can before the paste solidifies, leaving a soft watery soap jell on the top. Various and sundry products have been used over the years to prevent this settling out. First of all, the soap is run to the cans as cool as possible so that it will solidify in the shortest possible time and minimize settling out of the abrasive.

Then it seems that almost everything has been added in one way or another to thicken up the paste and retard settling. Flour, starch, gelatin, petrolatum, and the like are used upon occasion anywhere from two up to ten per cent with varying degrees of success. The most commonly used product is silicate of soda, usually around five per cent. This aids in forming a firm jell and preventing settling out. Trisodium phosphate is added supposedly for the same purpose. Various cheap gums, such as gum arabic and karaya have been tried, and also kelp extracts,—and more recently sodium alginate. But the silicate appears to meet with widest use, possibly because of its low cost. The addition of petrolatum, not over five or six per cent, does aid in making a firmer, smoother, more uniform finished paste. In products where the water content is too high and where the settling continues even after the product has cooled, petrolatum is a useful addition, although it does tend to reduce lathering properties if present in excess.

Drying out of hand paste in the can has been one of the chief bugaboos of manufacturers. Any product containing from forty up to sixty per cent of water is certain to dry out if left in the open. The result is that a large proportion of cans of hand paste are a hardened lump in the bottom of the can before they are used up. The addition of three or four per cent of glycerine aids in keeping the product soft, but where the cover of the tin is removed and left off, this amount of glycerine cannot do the impossible in preventing the loss of enough water so that the paste becomes a solid lump in the can. And if the directions on the can stated in letters a foot high to replace the cover, the average mechanic would still leave it off and let the soap harden. So about all the manufacturer can do in this respect is put the warning on the can and let it go at that.

As to the odor of hand paste, the less said about many products on the market, the

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pH—Its Meaning and Use

Practical application and determination in soap and detergent practice ... second of a series of three articles

By Dr. C. A. Tyler

TWO general methods are commonly used for the determination of pH, electrometric and colorimetric. Both have their advantages and their limitations. The choice of a method depends primarily on a knowledge of these as applied to the types of solutions which one wishes to examine.

The electrometric method of determination depends on the fact that a metal in contact with a solution of its ions is a potential source of electrical energy. The metal has a certain tendency to dissolve in the solution, while the ions of the metal have a certain tendency to deposition. This results in the formation of a double layer of charges at the surface of the metal which is the source of the electrical energy. The potential difference thus created depends on the individual metal and on the concentration of its ions in solution. It is not possible to measure the electromotive force of a single metal, but when two metals are properly arranged in contact with solutions of their ions, or a metal in contact with two different concentrations of its ions, this constitutes a cell and the potential differences can be measured and expressed in volts.

A metal used in this way is called an electrode, and the metal in contact with its ions in solution, a half-cell. In measuring hydrogen-ion concentration, one half-cell is used whose potential or voltage is constant and known, the other half-cell consisting of hydrogen ions in the sample solution in contact with an electrode of known potential. The only unknown is the concentration of free hydrogen ions in solution. The value for this can be calculated by difference from the voltage of the whole cell. A potentiometer in the circuit measures this E.M.F., electromotive force, in volts.

It is necessary to have a battery in the circuit, which serves as a source of current. The curent from this is adjusted to a standard value by connecting it in opposition to a current from a standard cell of known voltage, and testing with a galvanometer until the two exactly balance. The pH apparatus is so made that the battery and standard cell are often integral parts of it. A needle on the galvanometer scale deflects when current is passing through the circuit. When the variable resistance is adjusted so that the nedle no longer deflects, no current is passing and the battery can be used to supply the right amount of current to the cell containing the unknown. When this cell is switched into the system, the potentiometer is adjusted until the galvanometer shows no deflection of the needle. This means that the current from the cell containing the unknown exactly balances that from the battery, which has already been measured. This gives the voltage of the cell, from which the pH may be calculated. It is not necessary to use the Nernst equation for calculating the results, as many potentiometers are calibrated to read directly in pH units. Where they read in voltage, the instrument makers usually supply conversion tables which enable one to convert E.M.F. readings directly into pH values.

The electrodes most commonly used for electrometric determinations include the hydrogen electrode, quinhydrone, antimony, and glass. Each of these has certain applications where all of the others fail and no one is the complete answer to all pH problems.

The Hydrogen Electrode

THE hydrogen electrode has been used in pH work for a good many years. It is applicable to the entire pH range, and is the only fundamentally correct electrometric method for measuring pH at a very high degree of alkalinity, e.g. pH 12-14. Its limitations are that it cannot be used with sample solutions containing oxidizing or reducing substances; strongly foaming solutions, or dissolved gases. A high protein concentration interferes with the action of the hydrogen electrode. Salts have practically no effect. Turbidity and color do not interfere. The accuracy of the method as properly applied, depends largely on the type of potentiometer purchased. Very finely adjusted instruments will

give an accuracy of 0.005 pH, ordinary potentiometers about 0.01 pH, and portable potentiometers about 0.02 pH. A distinct disadvantage of the hydrogen-electrode system is that it is cumbersome in use because a supply of pure hydrogen gas is necessary.

The hydrogen electrode consists of a platinum wire fused into a glass tube and making contact with a wire running through the tube to a metal tip for connection to the electric circuit. This tube is fitted into a glass shield which has a side-arm for attachment to rubber tubing for conducting hydrogen gas from a source of supply such as a cylinder or tank of the compressed gas. The hydrogen is usually led through a wash solution of alkaline pyrogallol. The platinum tip must be coated with platinum black, which adsorbs the hydrogen gas flowing over it. The adsorbed hydrogen behaves in the same way as a metal does in contact with a solution of its ions. To platinize the electrode, it is dipped into a solution containing 3 per cent of platinic chloride and 1/40 per cent of lead acetate, then connected to the negative pole of a dry cell. Another platinum electrode acting as dummy is dipped into the same solution and connected to the positive pole of the dry cell. In about a minute the first electrode is coated with platinum black. The platinized electrode is then dipped into a 10 per cent solution of sulfuric acid and connected for 15-30 minutes to the negative pole of a dry cell, with a bright platinum electrode serving as dummy connected to the positive pole. The electrode is then rinsed with distilled water and kept immersed in distilled water when not in use. It is similarly rinsed after use in unknown solutions. When the electrode becomes poisoned by the adsorption of proteins or other material, it will be necessary to dip it in cleaning solution and replatinize. Poisoning of the electrode is indicated when it becomes impossible to get reproducible readings with the same solution.

A second electrode of known potential has to be used in combination with the hydrogen electrode to complete the cell. This usually consists of a saturated calomel half-cell. Specially purified chemicals are necessary for preparing this. These may be obtained from chemical supply houses or bought with the pH apparatus itself. A paste is made by grinding with a mortar and pestle the mercury, mercurous chloride (calomel), and a little saturated potassium chloride solution.

This paste is poured into a specially designed calomel-electrode vessel which makes contact with the unknown solution by means of a salt bridge consisting of saturated potassium chloride solution. The salt bridge is usually an integral part of the electrode vessel. A wire dipping into mercury is used to make contact between the electrode and the electric circuit, or a platinum wire may dip into the emulsion and connect with a metal tip. The salt bridge of saturated potassium chloride merely serves as a conductor between the reference calomel half-cell and the unknown solution, so that neither becomes contaminated with the other. Saturated potassium chloride solution gives a negligible diffusion potential. The newer types of calomel-electrode vessels use ground-glass joints where contact is to be made between two types of solutions, such as the salt bridge and the unknown. Some equipment houses supply calomel half-cells filled and ready for use.

Electrodes can be tested before use by means of buffer solutions. This is a general procedure which applies to any electrode system. Instead of having the two electrode systems dip into an unknown solution, they are immersed in a buffer solution which gives an E.M.F. or pH reading of known value. Buffer solutions are sold ready for use, e.g. a standard monosodium-dipotassium phosphate buffer giving a pH reading of 7.38, standard sodium acetate-acetic acid buffer reading pH 4.63, both at 25°C., and standard acid potassium phthalate buffer, reading pH 3.97 at 20°C. The conversion tables referred to above cover a range of temperatures. Some pH apparatus sets contain a mechanism for correcting to the temperature of the solution being examined, within a definite range. After the electrodes have been checked in this way, they should be rinsed with distilled water before being used again. The platinized electrode must never be allowed to dry out.

The Quinhydrone Electrode

QUINHYDRONE is an addition compound consisting of equimolecular parts of quinone and hydroquinone, into which it dissociates on solution in water. The difference of potential arises from the presence of quinone, $C_6O_2H_4$ and a secondary hydroquinone ion, $C_6O_2H_4=$. Anything which causes side reactions and thus disturbs the 1:1 molecular ratio of quinone to hydroquinone interferes with the use of this electrode. Strong oxidizing or reducing agents must be absent. Nitrates do not interfere. The quinhydrone electrode is subject to small salt errors, and shows an appreciable protein error. However, it is not as readily incapacitated as the hydrogen electrode and is therefore more practical. It is also much simpler to use, as no gas supply is needed. It is merely necessary to put a little hydroquinone into the sample solution, and insert a bright platinum electrode and a standard half-cell, usually a saturated calomel half-cell. It may be considered accurate to about 0.05 pH, although greater accuracy is possible. The great drawback of the quinhydrone electrode is that it can be used over only a limited pH range, —up to 8 or 8.5.

The simplicity of pH determinations with quinhydrone as well as the fact that the apparatus is somewhat less expensive than that for the hydrogen electrode, has made this type of equipment popular for routine work in the acid range. The glass electrode, which will be discussed later, fails to give good readings with sulfonated oils.[1] It is possible that quinhydrone might be the most satisfactory electrode for this type of solution or emulsion. The

quinhydrone electrode has been successfully applied to the determination of the pH of 0.1 *M* solutions of phenols and cresols.[2]

The Antimony Electrode

THE antimony electrode consists of a block of antimony containing some antimony trioxide. The behavior of the electrode is due to the presence or formation of insoluble hydroxides.[3] It is immersed directly in the sample solution, which must be in motion and exposed to the open air. It is ordinarily used in conjunction with a saturated calomel half-cell. The electrode can be used to cover a range of pH of 4-11.5 with an accuracy to about 0.2 pH. It cannot be used in the presence of oxidizing or reducing agents, a high concentration of sodium ions, or traces of copper or silver ions. The antimony electrode is very rugged. Its special field of usefulness is in making continuous pH recordings in tanks of flowing solutions where an automatic record is desirable for pH control. An antimony electrode outfit will usually cost somewhat more than the quinhydrone equipment and somewhat less than the hydrogen electrode equipment. The automatic recorder alone is apt to cost twice as much as the antimony equipment itself. It is difficult to generalize about prices, because each type of equipment can usually be purchased over a fairly wide price range.

The Glass Electrode

GLASS - ELECTRODE equipment is the most generally applicable and hence the most industrially important of any of the electrometric systems. The active part of the glass electrode consists of a glass membrane of such a composition that it adsorbs water readily. It is in contact with hydrogen ions of an unknown concentration on one side and of a known concentration on the other. A double layer of charges is formed at the surface and the final result is that the glass electrode behaves like a true hydrogen electrode. The glass membrane, however offers a much greater resistance to the passage of an electric current than in the other electrode systems, so that a much more sensitive galvanometer or its equivalent is required. Formerly the high cost of an exceedingly delicate null-point instrument (galvanometer or electrometer), as well as the fragility of the very thin glass membranes used, limited the usefulness of this type of electrode. The newer types of apparatus have overcome both of these objections.

The glass electrode is considered generally applicable in all types of solutions, and even in pastes and semi-solids. Oxidation-reduction systems do not interfere, so that it has been found the most satisfactory system for pH determinations in bleaching solutions, including colorimetric methods as well as the other electrometric systems.[4, 5] Colloidal solutions, proteins etc. do not interfere. The glass electrode is more dependable than other systems for nonbuffered solutions.

The limitation of this electrode is that at high pH values other highly mobile ions such as sodium, potassium and lithium affect the pH readings. The glass electrode is reliable from about pH 1 to 9.5, with an accuracy to 0.1 pH or better. The highly sensitive equipment is correspondingly very accurate. Above 9.5 a correction has to be applied in the presence of high concentrations of salt, as shown in the following table.[6]

pH Corrections in Alkaline Solutions at 25°C.

Total Cation from Salt and Base

Observed pH	*True pH*		
	0.1 *N* Na^+	1.0 *N* Na^+	1.0 *N* K^+
9.40	9.43	9.48	9.41
9.6	9.64	9.72	9.62
9.8	9.85	9.95	9.83
10.0	10.6	10.20	10.03
10.2	10.28	10.48	10.24
10.4	10.50	10.77	10.45
10.6	10.74	11.10	10.66
10.8	10.96	11.50	10.87
11.0	11.22	12.00	11.08
11.2	11.46		11.30
11.4	11.73		11.52
11.6	12.00		11.74
11.8			11.95
12.0			12.17

The table shows that at pH 12 in the presence of a *N* solution of sodium ions, corresponding to 5-6 per cent of sodium chloride, the reading with the glass electrode is a whole pH unit too low. Above pH 11, Dole advises calibrating the electrode with a buffer of about the same pH and cation concentration as that of the sample. The deviations in the presence of sodium ion are greatly affected by temperature, particularly at elevated temperatures. As already mentioned, the glass electrode is of doubtful accuracy with sulfonated oils. Also it should not be used in strongly dehydrating solutions, as these remove the water adsorbed by the glass membrane. For this reason, a glass electrode which has been cleaned with chromic acid, ordinary cleaning solution, should be rinsed well and then allowed to stand in distilled water for 2 days. It is particularly important to calibrate a glass electrode against a standard buffer each time before use.

The glass best suited for making the membrane contains 72 per cent of silica, 22 of sodium oxide, and 6 of calcium oxide,[7] and is sold commercially as Corning glass 015. The membrane may consist of a bulb, a cone, or may be of some other shape, as this is immaterial. It is preferably fused onto a stem made of harder glass than the membrane. An inner reference electrode of some sort has to be used inside the glass membrane to make contact with the outside circuit.

A number of types of inner

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[2]G. Parsy, *J. Intern. Soc. Leather Trades Chem.* 21, 261-74 (1937).

[3]P. E. Roller, *J. Phys. Chem.* 34, 367-72 (1930).

[3]Hubert T. S. Britton, "Hydrogen Ions," p. 79 D. Van Nostrand Co., New York. (1929).

[4]E. H. Voigtman & B. W. Rowland, Paper *Trade J.* 95, No. 9, 36-8 (1932).

[5]H. L. Lewis and S. I. Kukolich, *Paper Trade J.* 95, No. 11, 28-30 (1932).

[6]Macolm Dole, "Measuring pH with the Glass Electrode." (Wilkens Anderson Co., 111 N. Canal St., Chicago, Ill.)

[7]D. H. MacInnes and Malcolm Dole, *J. Am. Chem. Soc.* 52, 29-36 (1930).

NEW EQUIPMENT via Government Loans

By Arnold Kruckman

WORN and obsolete equipment rumbles and stumbles along year after year in thousands of small American factories chiefly because the average manufacturer in this class is usually lacking the ready cash to buy new machinery. This condition is probably more pronounced among the smaller manufacturers of soaps, detergents, insecticides, and allied chemical specialty products than in the more highly mechanized industries. To a very considerably extent, it accounts for the inability of some manufacturers to keep pace with better equipped competitors. It is a condition which spells higher production costs, and as such is a thief of profits,—and of quality as well.

But even where the cash is available, there are still those manufacturers who will continue to run their equipment while a last gasp remains in its shaking hulk, not appreciating the price which they are paying for their shortsightedness. It is to those who are more progressive, and modern-minded, but who lack the ready cash to carry out their ideas, that the following facts are directed. In a recent advertisement in this publication, the question was asked: "Would you drive a car of 1920 vintage?" Then why continue to use its counterpart among the equipment in your factory if you can arrange financially to do otherwise?

The business man who wants to modernize his plant, build an addition, or expand his business, or make arrangements to refinance, usually passes by his own bank, and other banks, with the discouraging thought that under present circumstances he cannot get the funds there. They tell him that the banks are bursting with money, but for reasons that are good and sufficient to the custodians of other peoples' cash they are very wary about letting it get beyond their immediate control. This is the condition supposedly that has impelled Congress to provide means by which the business man may secure funds with the backing of the Government, either from the cautious banks themselves, or from the Reconstruction Finance Corporation, which is a government agency.

The curious aspect of this arrangement is that apparently only a few business men really know that they may secure these funds that have been made available by the action of Congress. I specially stress the fact that the money has been put at the disposition of the business man by Congress because there is not a very clear impression abroad that this money has been provided chiefly by the action of Congress. The propaganda machine here in Washington would make you believe that it comes solely as the result of the wisdom and goodwill that center around the White House. It is true that the White House wants the business man to have this money, particularly at this time when the possession of funds may help the Administration beat the current slump. But it is also true that this money and the legal authority to spend it would not be available without an Act of Congress.

Red-tape abounds in most Government transactions. There is much red-tape connected with the FHA and with the RFC. But the will of the Congress about these small business loans was so emphatic that the red-tape has been reduced to a minimum, and you may secure an insured loan through the FHA in from 48 hours to ten days, or an RFC loan as quickly as two weeks. The purpose behind these loans is to help the so-called "small" business man,—who makes up over 90 per cent of the business of the nation,—to secure ammunition to increase his business, and, by doing so, to put money in circulation.

Any time you have a reasonable plan that means the spending of money which will tend to increase wages, directly or indirectly, you will find the Government agencies eager to help you get that money. And you will find the officials who hold the purse-strings quite tolerant. An honest effort to help in restoring prosperity by a reasonably competent business man represents a large part of the security upon which these loans will be made. Undoubtedly if there should appear an official with hardened bureaucratic arteries, who wishes to use excessive red-tape, your representatives in Congress will be only too glad to help you to convince him that he does not understand the intent of these emergency laws.

The FHA loans, formally designated as modernization or property improvement loans under Title 1 of the Amended National Housing Act, of course, are not direct loans. They are loans made by banks, building and loan associations, cooperatives, insurance companies, finance corporations, contractors, equipment merchandisers, material dealers, builders, or any responsible individual or corporation or firm with whom the business man may do business. The loans, however, are prompted by the FHA which insures or guarantees the loans. The main point to remember, in the beginning, is that the agency which makes the loan *must be approved by the FHA*. For this reason it is usually wise to begin the transaction by first discussing your wants with the people in the nearest FHA agency. The FHA now has offices in 63 different cities.

There is one either in your immediate community or right near you, no matter where you are located. If you cannot find the whereabouts of your FHA headquarters through your bank, or through your Chamber of Commerce, write me care of SOAP, and I will send you the address.

The FHA people will advise you just what you must do. In many instances, the FHA really does everything except actually loan you the money. And, off the record, aside from telling you where you may find the bank or institution in your neighborhood who is *authorized* by approval to make the loan, the FHA people may quite possibly do things that will induce the bank to look upon the loan with approval. In the end most of the eventual result depends upon you. If you are just an average sensible run-of-the-mine business man, and you are doing average sensible run-of-the-mine business under present recessive conditions, you will get your insured loan. You may borrow up to $10,000 to remodel, rehabilitate, refurbish, or to replace old equipment or install new fixtures *that are a permanent structural or "built-in" part of your establishment* You are entitled to the loan even if you do not own the premises. Tenants are eligible for loans upon the condition that the loan be repaid six months before the lease expires. It is interesting, likewise, that separate loans may be negotiated upon separate units of property or business, and that the borrower may obtain up to $10,000 on each such unit if the FHA determines that he is capable of carrying such separate loans.

The loans are made to build additions to buildings, to make repairs, and to install heating plants, air-conditioning systems, plumbing, dust collector systems, or any type of processing equipment that may be classified as a permanent structural integral part of a business establishment. It is difficult to enumerate additions and equipment as they apply to every different kind of business. Those mentioned are merely samples. Each business has its own idiosyncracies, and each business man's specific establishment has problems that are singular to that particular business. The tendency of the new FHA law enacted by the Congress is to give a liberal definition to the word "structural." Congress mainly had in mind that every reasonable need should be met. The business man who wants a modernization loan will find the FHA cooperative.

These FHA insured loans are made for the benefit of any kind of business, and for any part of a business. They may be used to rehabilitate factories, warehouses, to modernize offices or office buildings, to build separate but subordinate parts of an existing system of buildings. You may equip a new laboratory in an existing building or build a new one.

The FHA has approved over 12,000 agencies in the United States to make loans. The first formal step is the filing of a credit statement that is similar to any other credit statement, except that it is probably less complicated. The FHA furnishes the blank, and the lending agency checks up the answers. The procedure is practically the same as when you go to the bank for an ordinary loan. If the risk is not absolutely bad, the applicant fills out his note and quickly receives the cash. If the loan is made through a dealer or a contractor or any other intermediary who sells the paper to a bank, the final lending agency must file a Certificate of Completion that guarantees the transaction is real and has been performed.

At this writing the average loan has been $400. This is usually paid in 36 months, at the rate of $12.78 a month; a total of $459.92. Loans under $2,500 do not involve security. Loans ranging from $5,000 to $10,000 usually involve some form of security, and loans between $2,500 and $5,000 often are made without security. Mortgages on property, stocks, receivables and the usual collateral constitute securities. The modernization loans mature in 5 years. However, there appears to be wide leeway and discretion under which a sound borrower may extend his loan as the bank and the borrower may, under the law, arrange. The FHA Manual rules that the equivalent of $5.00 discount per $100 original face value of a one year note is payable in equal monthly installments. This *maximum* charge equals 9.72 per cent return annually on the average amount outstanding, the sum of this return being made up of amortization of the principal, interest, and charges. Provision is made for repayments seasonally as well as monthly. The $2,500 loans for independent business structures mature in 7 years and monthly or seasonal repayments average 6.69 per cent on an outstanding annual balance.

And here is the way you may secure a straight commercial loan from the RFC if you cannot secure a loan from your bank. The last is important. They always make sure that your bank has turned you down. The primary conditions for an RFC loan are that the business is solvent and that the funds will be spent to increase wages. Loans that mean more employment receive the right-of-way above all other kinds of loans. The quickest way to get a loan is to take all data to the man in charge of the nearest RFC agency. There are 32 RFC agencies scattered about the United States, each serving a certain section. The terms are more liberal than a bank loan. At this time of combat with depression conditions, there is more tolerance in appraising assets. RFC loans recently have been made for sums as low as two hundred and three hundred dollars. A great number of loans are made for less than $5,000, at an average rate of 5 per cent, running from 5 to 10 years. Loans under $25,000 are made upon simple sworn statements, together with the usual references, and a statement of the object of the loan. Loans over $25,000 usually require a special audit by RFC accountants. Aside from labor, the purchase of materials or equipment is the greatest incentive for a quick loan. It is possible to secure RFC loans to pay indebtedness and taxes; and it is not a bar to negotiating a loan because the borrower is bankrupt or in a receivership. Inventions or patents will not be financed. As long as the loan runs, officers' salaries must be satisfactory to the RFC; and dividends may be paid only if the RFC approves.

Cedar leaf oil is distilled from the northern white cedar, cedar wood oil from southern red cedar.

Photo Courtesy P. R. Dreyer Inc.

CEDAR . . . What type odor?

BECAUSE there is a wide variation in the different types of cedar odors, a buyer is liable to get almost anything when he specifies "cedar" or "oil of cedar" without qualification. He may find that a cedar for use in a soap compound or a moth product which is shipped to him by one supply house has no resemblance to that which comes from another source. He may find that the price in one case is twenty cents and in the other seventy-five cents per pound. One may be a straight oil, and the other a mixture, or both may be blends of a hundred-and-one possible combinations. Although differing widely in origin and properties, the two essential oils, cedar wood and cedar leaf, and many of the combinations which are based on them, are frequently confused in the minds of buyers, according to essential oil houses.

Time and again, calls are received asking for information and prices on one oil, when, it subsequently develops, the other was meant. In handling such inquiries, dealers are careful to point out the existence of the two distinctly unrelated cedar oils, and to indicate the differences in price, as well as in characteristics. Essential oil houses quote 18½c per pound as the present market base price for cedar wood oil in drums, and 62c per pound for cedar leaf oil. Probably a large share of the confusion which exists is due to the fact that their uses often overlap, that sometimes the two are blended together, and also with other products and sold as plain "cedar" or "cedar compound."

Rather than discuss their likenesses, it would probably be more to the purpose if each oil were discussed separately. To begin with, the name cedar leaf oil, in the opinion of essential oil experts, is a misnomer. Among themselves and in the laboratory they call it oil of thuja to distinguish it from the essential oils of the coniferous, or cone bearing plants, of which cedar wood oil is one variety. Oil of thuja, or cedar leaf oil, is obtained by distilling the twigs and leaves of the *thuja accidentalis*, which is known in North America as the white cedar, and sometimes as the swamp cedar. It grows only in the northern climates of the temperate zone, and is found in the United States principally in upper New York State, Vermont and New Hampshire. The trees are grown by farmers who, once a year, usually in the spring when the oil yield is greatest (the yield diminishes during the summer months and is lowest in July), harvest their "crop" of leaves and twigs, and either deliver them for distillation to essential oil producers in the vicinity, or distill the oil themselves.

Oil of thuja has been secreted by nature in the leaves of the white cedar tree, thereby protecting it from the chilling winds and frosts of the northerly regions. For that reason it is said that the best stocks are found on hills or exposed places, where extremes of weather are likely to occur. Gildemeister and Hoffman, in *The Volatile Oils*, state that white cedar trees exposed to sunlight on

all sides yield the best oil, and that trees growing in shaded tracts yield an inferior oil that is darker in color. The preferred range is from colorless to yellow, or yellow-greenish color.

Among the outstanding characteristics of oil of thuja is its highly aromatic, pleasing, and strong camphor-like odor, which some essential oil experts compare to lemon verbena, and others to malefern, or aspidium. Oil of thuja is stated to have some value as an insecticide. An up-State New York producer relates that when the stills are started in his plant each spring, as soon as the water and oil reach the streams where water is being pumped for the condensers, the white bellies of many small fish can be seen floating on the surface. He also declares that although the distillation plants are located beside streams or ponds of fresh water in order to have a constant supply at hand for distillation, flies, mosquitoes, or other insects give them a wide berth.

In addition to its use in soap, for which purpose, incidentally, it does not have nearly as wide an application as has cedar wood oil, and in moth-proofing products, oil of thuja is used quite extensively in para blocks, chiefly in blends with other perfumes. Its comparatively higher cost, 62c per pound against cedar wood at 18½c,—is due to its lower yield. A hundred pounds of twigs and leaves will produce approximately only one-half pound of oil. The yield varies according to the season, from 0.4 per cent to 0.65 per cent. Oil of thuja is a highly volatile oil, the chief constituents of which are pinene, thujone, fenchone and camphor.

WHILE cedar leaf oil is derived from the white cedar found only in the north, cedar wood oil is distilled from the wood of the red cedar tree, known as *juniperus virginiana*, found only in the south, principally in Florida, the Carolinas, Georgia and Tennessee. For a great many years, manufacturers have made cigar boxes, lead pencils, cedar chests, cedar pails and numerous wooden ornaments from the wood of the red cedar tree, and then distilled the waste shavings, saw dust, stumps, knots, etc., which were left behind, to obtain a colorless, somewhat viscid oil which has found wide use as a perfume for soap, for insect sprays, for treating paper to be used in moth-proof garment bags, and for perfuming furniture and automobile polishes.

Oil of cedar wood is rarely distilled from green wood, since it is claimed that the older and drier the wood, the richer the oil. It has even been suggested that cedrol, one of the chief constituents of the oil, is not present in fresh wood, but this has not been entirely proven except in so far as to establish that oil from old wood is far richer in cedrol. The chief source of seasoned cedar wood used in the distillation of oil of cedar wood is that obtained in lead pencil manufacture, shavings from which are usually plentiful when the pencils are cut from seasoned logs.

Oil of cedar wood is a thick syrupy oil, soluble with difficulty in ordinary alcohol. It has a mild, bland, but very persistent odor, hence its use in soaps. Although usually colorless and translucent, it occasionally is studded with crystals of cedar camphor. Since the wood from which cedar wood oil is obtained is wholly a by-product, and since the yield of oil is higher than that of oil of thuja, its price is much lower. From 2.5 to 5 pounds of oil are obtained from a hundred pounds of wood, whereas only one-half pound of oil of thuja is obtained from the same amount of twigs and needles from the white cedar tree. Cedar wood oil is less volatile than oil of thuja, but its odor is more persistent.

What the man-on-the-street recognizes as the odor of cedar is cedar wood oil, probably because of his association of the odor with cedar closets and cedar chests. However, in order to secure the best odor effects according to the circumstances under which the odor is to be used, whether it be a soap compound, moth crystals, fly spray, polish, or what not, admixture with other substances which change the character of the original cedar odor is usually resorted to. In other words, a perfumer who is familiar with the properties and uses of both cedar leaf and cedar wood oils in practical perfuming, can obtain a better effect in the finished product by skillful blending where he knows what that product is to be, than can be secured by the manufacturer who attempts to use the oil straight or by adding other perfuming materials which may completely change the character of the cedar odor.

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Experimental Hydrogenation

Reproducible hydrogenation data have been obtained when working in a glass vessel having a fritted glass bottom through which the hydrogen is forced into the oil. The ascending fine hydrogen bubbles were superior to a stirrer in keeping the catalyst in continuous suspension. Factors such as rate of flow, pressure of hydrogen etc. were controlled by the usual methods. Reproductibility of results was considerably better with pure metal catalysts such as nickel than with catalysts on carriers, such as platinum on barium sulfate. At the conclusion of a hydrogenation experiment, the fritted glass bottom can be used to filter the catalyst out of the oil. It is thus possible to reuse the catalyst without bringing it into contact with the air, so that changes in catalyst activity on continued re-use can be readily studied. H. P. Kaufman. *Fette und Seifen* **44,** 514-8.

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Ammonium Textile Assistants

Quaternary ammonium salts useful as textile assistants are obtained by the reaction of an aliphatic acid amide and formaldehyde with a salt of pyridine, an alkylpyridine or quinoline. The products foam in aqueous solution. An example is stearohydroxymethylamide and the addition product of pyridine and sulfur trioxide, free pyridine being present. British Patent No. 475,170.

Oil and Fat Outlook

Larger supplies of soap fats will be available over balance of 1938 . . . Fat and oil consumption in soap industry approached 1929 peak last year when 1,660,000,000 lbs. of fat were made into soap.

BOTH domestic production and imports of soap-making fats and oils are reported on the increase by the U. S. Bureau of Agricultural Economics, with the prospect that over the second half of 1938 even larger supplies of soap fats than the near record totals of 1937 will be available. According to the bureau's report, the soap industry consumed 1,660,000,000 pounds of fats and oils in 1937, just short of the record annual consumption of 1,700,000,000 pounds registered in 1929.

The most important and significant trend in 1937 was the swing from coconut to palm kernel oil and the shift from tallow to palm oil. In 1937, 112,000,000 pounds of palm-kernel oil were used in soap, as compared with only 26,000,000 pounds in 1936. This sharp advance directly paralleled a drop in consumption of coconut oil from 307,000,000 pounds in 1936 to 252,000,000 pounds in 1937. Consumption of inedible tallow dropped from 660,000,000 pounds in 1936 to 614,000,000 pounds in 1937, while palm oil was registering an increase in use, moving up from 78,000,000 pounds in 1936 to a total consumption of 141,000,000 pounds in 1937. Whale and fish oils also continue to replace other soap making materials, — their consumption by the soap industry totaling 189,000,000 pounds in 1937, as compared with 161,000,000 pounds in 1936 and 138,000,000 pounds in 1935.

As to future prospects in the oil and fat market, the bureau predicts that larger stocks of soap fats will be available over the balance of 1938. This outlook apparently accounts for the present low level of fat and oil prices which in many cases are scraping depression lows. The recovery in the security and commodity markets has as yet had apparently little effect on the fat and oil markets, and the reason may clearly be found in the prospect of increasing fat production.

Production of inedible tallow in the first quarter of 1938, for instance, was 27,000,000 pounds larger than in the same period of 1937. It is expected that total production for the year may exceed the 625 million pounds produced in 1937. The estimate of increased production is based on the bureau's report that the number of cattle slaughtered during the second half of the year may total about the same as in the second half of 1937, but the weights of the cattle slaughtered probably will be heavier than a year ago. Stock of inedible tallow on March 31, 1938, were more than 30 million pounds larger than on March 31, 1937, but were smaller than on the corresponding date in any other year since 1933.

Production of grease was about the same in the first quarter of 1938 as in the corresponding period of 1937. It is probable, however, that production for the 6 months, April to September, may be somewhat larger than last year, since the bureau reports that slaughter supplies of hogs for the remainder of the 1937-38 marketing year, ending September 30, will be larger than supplies last summer. Stocks of grease on hand March 31 were larger than on the corresponding date in any of the 3 preceding years.

Production of domestic vegetable oils has been sharply higher in the 1937-38 crushing season than in immediately preceding years, due principally to the large cottonseed crop and the record supplies of vegetable oil foots. The available supply of these domestic vegetable oils is of importance to the soap industry chiefly because it releases a larger

(*Turn to Page* 39)

Fats and Oils Used in Soap Manufacture

Product	1935 *Mil. lb.*	1936 *Mil. lb.*	1937[1] *Mil. lb.*
Inedible tallow	663	660	614
Whale and fish oils[2]	138	161	189
Greases	98	99	94
Palm Oil	87	73	141
Coconut oil	230	307	252
Palm-kernel oil	37	26	112
Babassu oil		9	14
Cottonseed foots and other foots[2]	191	183	183
Olive foots and inedible oil[3]	33	26	19
Other	26	29	41
Total fats and oils	1,504	1,578	1,659
Rosin	139	148	136
Total saponifiable materials	1,643	1,726	1,795

[1]Preliminary.
[2]Hydrogenated.
[3]Estimated, and includes some miscellaneous materials (as red oil from animal fats).

New Products

B. T. Babbitt, Inc., New York, is using two new floor display stands to build consumer demand for its two grades of lye. Robert Gair Co., New York, designed and supplies both the stands.

"Fay's Professional Brush-Glo" is a new cleaner for bristle brushes and dentures introduced recently by Parfumerie De Raymond, Inc., New York. Container supplied by Cannister Co., New York.

The new specialties line of Shell Petroleum Corp., St. Louis, includes "Glass Kleanzit" and "Shell Furniture Polish" in various sizes. Handy spray-type dispensers are supplied for use with the glass cleaner.

and Packages

E. I. du Pont de Nemours & Co. have recently put on the market a new chrome cleaning kit which includes a chrome cleaner and a chrome lacquer. The cleaner, it is said, does not leave any oil or soap film.

Shulton, Inc., New York, is making use of an authentic reproduction of an old-fashioned salt box as a container for its "Early American" bath salts. A scoop is supplied for transferring the salts to the tub.

◆

In a check test in 100 drug stores, Colgate-Palmolive-Peet Co. discovered that use of these attractive bags, each carrying a dozen cakes of soap, tripled soap sales. Campaign was based on the promotion theme, "Take Home a Bag of Soap."

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News....

Pynol Buys Burlington Plant

Pynol Co., manufacturer of toilet soaps, liquid soaps, shampoos, bath salts, and liquid antiseptics, with headquarters at Quincy, Ill., has purchased a new plant at Burlington, Ia. The new unit will manufacture a complete line of toilet preparations, sanitary supplies and detergents. E. A. Ray, formerly vice president of Iowa Soap Co., at Burlington, is in charge. The company will manufacture colloidal detergents under formulas of Port Huron Detergent Co., for which it has exclusive sales and manufacturing rights in Iowa, Nebraska, Illinois, Missouri, Kansas and Minnesota. D. M. McConnell is president of Pynol Co.

No Soap for New York Schools

The Board of Education of the City of New York has decided not to act on the recommendation that free soap be distributed in the washrooms of the city's 1,000 schools for the use of nearly 1,200,000 pupils. The recommendation had been sent by Ellsworth B. Buck, chairman of the board's committee on buildings and sites, who estimated that it would cost $135,000 annually, about 12 cents a pupil, to provide the materials, which included paper towels. As in the past the board refused to provide the soap and materials because of the high cost and the fear that the materials would be wasted or used to clog plumbing facilities. Mr. Buck had recommended that $235,000 be included in the budget the first year, $45,000 for 88,000 gallons of liquid soap, $90,000 for paper towels, and $100,000 for dispensing equipment. He said his recommendation had been influenced by a questionnaire sent to 150 school systems throughout the country, which revealed that 73 cities out of 81 which answered the questionnaire reported that free soap and towels were being supplied to public school pupils.

Railey New Colgate Vice Pres.

B. W. Railey has been elected a vice president and director of Colgate-Palmolive-Peet Co., Jersey City, N. J. Mr. Railey will be responsible for the company's soap business west of the Mississippi River. His offices will be in Kansas City and Berkeley, Calif. He was at one time vice president of Peet Bros. Soap Co., now part of Colgate-Palmolive-Peet, and later president of Kirkman & Son, Brooklyn.

B. W. Railey

Cook Joins Pylac

Howard S. Cook, for nine years advertising and merchandising manager of John T. Stanley Co., New York, has joined Pylac Products Co., Belleville, N. J. A successor to Mr. Cook has not as yet been named.

P&G Acquires Radio Serial

Procter & Gamble Co., Cincinnati, has signed a five-year contract for a daytime radio serial called "Life Can Be Beautiful," scheduled to start in September.

Wants Soap Agency

A concern in Pasto, Colombia, is interested in communicating with American manufacturers of toilet soaps for the purpose of establishing a sales agency. Interested parties may secure further information through the U. S. Bureau of Foreign & Domestic Commerce, Washington, inquiry 7046.

"Vogue" Mark Denied

Harris Soap Co., Buffalo, N. Y., has been denied the right to register the word "Vogue" as a trademark for soap in chip or flake form. The U. S. Patent Office Examiner based his decision on the existence, at the present time, of a corporation in Georgia known as "The Vogue."

Central States Moves

Central States Chemical Co., St. Louis, manufacturer of soaps and sanitary chemicals, has moved its factory and laboratories to larger quarters at 2410-12-14 South St., and its offices to quarters at 517-18 International Building. The company has recently issued a revised price schedule, which is available on request.

Johnson & Johnson Offer

Johnson & Johnson, New Brunswick, N. J., manufacturers of "Red Cross" toilet goods, are offering to equip a complete first aid department in the stores of all druggists purchasing a minimum of $15 worth of "Red Cross" products.

Thieves Visit Bennett Plant

The offices and storerooms of Arthur E. Bennett & Co., Chicago essential oil house, were burglarized last month. The burglars obtained a small amount of cash, but did not disturb any of the large stock of oils and compounds stored on the premises.

Super Suds Price Set in Ohio

Colgate-Palmolive-Peet Co., Jersey City, N. J., announced last month that it had established minimum retail prices in Ohio under that state's fair trade laws, issuing contracts covering "Super Suds" and "Concentrated Super Suds." The company previously had set prices in Ohio on "Palmolive" soap. Under the new contracts there is a minimum of 9 cents, or three boxes for 23 cents, on the regular size "Super Suds," and 16 cents, or two boxes for 31 cents, on the giant size. Minimums on "Concentrated Super Suds" are 8 cents, or two for 15 cents, for the medium size, and 19 cents, or two for 37 cents, on the large size.

Guatemalan Soap Imports

Imports of medicinal and antiseptic soaps into Guatemala increased from 367 kilos in 1935 to 551 kilos in 1936, the last year for which details are available. Consumption of other soaps, however, is largely confined to products of domestic manufacture, and does not show an increase over 1935. Total imports for 1936 were 15,373 kilos, of which the United States supplied 9,978 kilos. Germany was next heaviest supplier.

Fritzsche Executive Sails

George L. Ringel, vice president of Fritzsche Bros., Inc., New York, sailed recently on the *Conte di Savoia* on a combination business and vacation trip to Europe. He was accompanied by Mrs. Ringel. Mr. Ringel plans to include on his tour a visit to Fritzsche Brothers' extraction plant at Seillans, France. He will return on the *Queen Mary* the early part of August.

National Oil Elects Officers

Charles P. Gulick, founder and former president of National Oil Products Co., Harrison, N. J., has been elected chairman of the board, a new position, and John H. Barton has been named president. Other officers are: Thomas A. Printon, vice president in charge of industrial sales; P. S. Brown, vice president; G. Daniel Davis, vice president; Ralph Wechsler, treasurer; and Albert A. Vetter, secretary.

Honor Harriet Challenger

Theo. B. Robertson Products Co., manufacturer of soaps, disinfectants and sanitary supplies, recently gave a banquet at the Pearson Hotel in Chicago, honoring Miss Harriet Challenger, secretary and treasurer, who has been 25 years with the firm.

Miss Harriet Challenger

P. & G. Renews Radio Shows

Procter & Gamble Co., Cincinnati, has renewed for a year its network radio program for "Oxydol" and "Dreft." The "Dreft" program is broadcast over a 13-station midwestern network, fifteen minutes each, Mondays through Fridays, and the "Oxydol" program over an 11-station network in the eastern half of the country, same length program and number of days.

Bon Ami Net Higher

Bon Ami Co., New York, reports a net profit of $679,035 for the six months ended June 30. This compares with a net of $678,998 in the first half of 1937.

T. Clayton Mowry Dies

T. Clayton Mowry, president of Baum's Castorine Co., Rome, N. Y., manufacturers of liquid soaps, shampoos and polishes, died last month.

C-P-P Ruled Patent Infringer

Processes of Colgate-Palmolive-Peet Co. for the manufacture of "Super Suds" and "Palmolive Beads" were declared to be an infringement of U. S. Patent No. 1,718,778, owned by Bertram W. Coltman, Chicago patent attorney, in a legal action decided recently in the Indianapolis division of the Indiana Southern District Court before Judge Robert Baltzell. Coltman claims that in 1921, at the age of 23, he got the idea for a spray soap process and worked it out crudely in the basement of his Chicago home. His first patent application was filed August 15, 1921. Patent No. 1,653,390 covering method and apparatus was issued December 20, 1927, and the product patent, describing a soap product of the component particle type, was issued June 25, 1929. His process does not involve the spraying of soap in a spray tower, but applies rather to the spraying of a thin film of kettle soap onto a belt and subsequently passing the belt through a dryer.

The patent on which the C-P-P process is based is the Lamont Patent, issued in 1927, and successfully defended in a long court action with Lever Bros. Co. Lamont at one time held an option to buy the Coltman Patent, it is stated, but this option was never exercised. The Coltman claims were presented before Judge Baltzell by Albert F. Mecklenburger of the Chicago law firm of Ames, Thiess, Olson & Mecklenburger. A decision was handed down upholding the validity of the Coltman Patent and declaring that the patent has been infringed by Colgate in the manufacture of "Super Suds" and "Palmolive Beads." Colgate has been enjoined from further infringement and an accounting for damages ordered, but as an appeal has been filed these features of the decision do not take immediate effect. The appeal will probably be heard before the U. S. Circuit Court of Appeals in Chicago in the late fall or winter.

H. A. Wiedman, sales manager, P. R. Dreyer Inc., essential oils, New York, has been elected secretary of the company.

Ask 40¢ Per Hour Rate at Washington Wage Hearing

At the Washington hearing — R. C. Edlund, W. H. Burkhart, S. W. Coleman, R. H. Young, G. A. Wrisley, M. Mundheim, A. J. Caldwell and W. S. Rapelje.

PRESENTING statistics indicating a 40-cent hour minimum wage prevails among medium and small soap manufacturers, Roscoe C. Edlund, manager of the Association of American Soap and Glycerine Producers, urged the Public Contracts Board of the Department of Labor in a hearing at Washington, D. C., July 13, to give consideration to that basic figure when setting wage rates for soap makers bidding on federal government business. At the same time, Mr. Edlund asked for a tolerance of 7½ cents for workers engaged in "light tasks" in the soap industry, making a 32½ cent an hour scale applicable to those employees.

The statistics and testimony of individual soap manufacturers were presented to the board of three members in connection with the program to fix minimum wages under the Walsh-Healey Act for employees engaged in filling government contracts of more than $10,000. Although labor representatives were notified, none appeared at the meeting. Communications were received subsequently, however, from local unions in Bristol, Pa., Norwood, Ohio and Kansas City. These were entered in the official record which is now closed.

Possibility of a double wage scale for soap makers—one for large manufacturers and a lower rate for medium and small plants—was seen in a suggestion by Major Robert N. Campbell, board member. Major Campbell's plan contemplates grouping of the industry into two classifications: large organizations of 1,000 employees and more; and small units of less than 1,000 workers. This possible solution to the question was proposed after it was made obvious in testimony presented to the board that entirely different wage scales exist between the two types of concerns.

Discussion by the board and the soap industry representatives centered largely around whether the minimum average wage, or the wage paid by the largest number of companies should be the controlling factor in setting wage rates under the Walsh-Healey Act. The board, in dealing with other industries, has made it a policy to give considerable weight in fixing its minimums to the predominating wage in the lowest paid quarter of all employees. The soap industry representatives pointed out that while a small number of companies in their industry, employing large numbers of workers, paid high wages, consideration should be given the great number of small and medium sized establishments employing less help per plant and paying lower wages. If the smaller manufacturers were compelled to observe the same wage scale as the larger companies when filling government orders, it was pointed out, much of that business would go in the future to the larger establishments.

Although the labor board's survey of the industry's wages did not include companies in the south, the consensus of those attending the meeting was that the industry does not have important geographical differentials in pay rates. Nevertheless, Mr. Edlund expressed a personal opinion that wages do vary to some extent with the size of the community. In this connection, a telegram from J. W. Sartwelle, head of Texas Soap Mfg. Corp., Houston, Texas, was read, urging adoption of a minimum wage of 30c per hour, piece work for light tasks and a minimum differential of 5c per hour in favor of Southern manufacturers. Other data from Southern soap makers was also presented.

Presenting the government's survey, Dr. Jacob Perlman, of the Bureau of Labor Statistics, stated that the report is based on a sample of 7,143 wage earners in 72 soap manufacturing establishments.

The average wage earned during January, 1938, Dr. Perlman stated, was 68.8 cents an hour. But, he continued, such a figure conveys little information as to the multiplicity of individual earnings, as pay rates ranged from 32½ cents to $1.12½ cents in 97 per cent of the cases.

Considerable time at the hearing was devoted to arriving at a definition of the soap industry. General conclusions as to what constitutes soap production read: "Manufacture, as a primary product, of soap in bars and cakes and in granulated, powdered, and liquid form, and of cleansers, scouring powders, and washing compounds containing soap made in the same factories. Such products as soap pastes, creams, chips, and flakes are also included under this definition, although makers of brushless shaving creams are excluded."

Soap manufacturers heard by the board were G. A. Wrisley, of the Allen B. Wrisley Co., Chicago; N. S. Dahl, of John T. Stanley Co., New York; J. C. Brush, of Modern Brands, Inc., Newark, N. J.; and R. H. Young,

Bobrick Announces

Patent Applied for

A New Powdered Soap Dispenser

MODEL No. 33 with its modern stream-line solid bronze chromium plated body—theft proof universal bracket which may be installed with either screws or toggle bolt and which allows the dispenser to be removed for washing and cleaning without disturbing the wall plate—hinged lock top and crystal clear glass jar make it the final word in powdered soap dispensers—the first powdered soap dispenser ever offered the independent soap manufacturer and jobber which enables him to compete with modern liquid soap equipment.

DISPENSES ANY SOAP—The only moving part is the plunger which is a new and unique design, with rings which scrape the soap off the sides of the cylinder at each stroke. It will dispense any kind of powdered, granulated, bead or even pumice soaps without jamming or sticking. The agitator spring moves back and forth at each stroke of the plunger forcing the soap down into the plunger and breaking up any lumps that may accumulate.

TRIAL OFFER—There is only one way for you to visualize what this dispenser will do for your business: TRY IT YOURSELF. In order that you may do so, we will ship you a returnable sample, prepaid at the dozen price. Put it up on the wall. Give it every possible test and if you do not wish to keep it you may return it within two weeks and we will cancel the charge. This offer is good only until September 1, 1938.

BOBRICK MANUFACTURING CORPORATION

15 East 26th Street
New York, N. Y.

111-117 So. Garey Street
Los Angeles, Calif.

BOBRICK MANUFACTURING CORPORATION
15 East 26th St., New York, N. Y.

As per your offer in SOAP, please send us, prepaid and at the dozen price of $2.50, one of your new Model No. 33 Powdered Soap Dispensers. It is understood that we may try this Dispenser for two weeks and at the end of that time will either remit $2.50 to you or return the Dispenser.

NAME .....

ADDRESS .....

CITY ..... STATE .....

BY .....

Returnable Sample $2.50 Send for Yours To-day

of Davies, Young Soap Co., Dayton, O.

Mr. Wrisley pointed out that labor costs are more important in a smaller business because of its lower degree of mechanization. Asked by the board if he would favor two sets of wage scales, one for the large companies and one for other estabments, Wrisley answered: "As a smaller soap manufacturer, that would be fine." When the same question was put to a representative of a large soap maker, he declined to comment.

Determination of wage scales to be observed by successful bidders for federal contracts in excess of $10,000 was made a function of the Secretary of Labor when the Walsh-Healey Act was passed by Congress. Secretary Frances Perkins established the public contracts board to carry out the congressional mandate. Relatively few industries have had rates fixed for them under this law, and hourly schedules have leveled off at approximately 40 cents on average.

When a federal contract is awarded subject to the Walsh-Healey Act, the pay schedule fixed by the Secretary of Labor becomes applicable only to those operatives engaged in producing materials to fill the government's order. The rates do not become uniform throughout the plant, nor is there any requirement that they be observed after the contract has been executed.

Soap Quota Continued

The expiring Netherlands Indies' quota restrictions on imports of various kinds of soaps have been continued for one year, beginning with June 10, 1938, according to a recent government decree.

Parento Branch Moves

Compagnie Parento, Inc., Croton-on-Hudson, N. Y., manufacturer of essential oils, announces the removal of its Chicago office to larger quarters at 537 South Dearborn St. A complete line of the firm's essential oils and perfuming materials is carried at the Chicago branch.

F.T.C. Analyzes Soap Ads

An insight into what the U. S. Federal Trade Commission, backed by the powers given it under the Wheeler-Lea Act, considers unfair advertising in the soap and allied fields, is revealed in an analysis of the stipulations entered into recently by Lever Brothers Co., Cambridge, Mass., concerning representations made in the advertising and sale of "Lifebuoy Soap," "Lux Flakes," and "Lux Toilet Soap." Certain basic ideas, for example, the "B.O." copy theme used by Lever Brothers for a number of years, met with the Commission's objections.

The following list shows the particular advertising to which exception was taken, together with the objections on which the exceptions were based.

Lifebuoy Soap

Advertising:—"My skin's improved 100 per cent since I've been using Lifebuoy! It's never dull or blotchy any more."

Objection: — "That no soap can be depended upon to improve the skin of a user 100 per cent, or any other stated percentage; that dull or blotchy skin is frequently due to internal conditions as well as external conditions."

Advertising: — "Ladies, I'll tell you how to keep your skin fresh and clear as a baby's—"

"I find Lifebuoy is simply marvelous for the complexion too! Keeps it clear and smooth, radiant with health!"

Objection: — "That no soap can be depended upon to keep the skin clear except in connection with conditions due to, or aggravated by dirt, cosmetic residue, epithelial debris, or foreign matter."

Advertising: — "Remember, germs of 27 diseases are spread by hands alone."

Objection: "That the number of diseases which can be spread solely by the hands has not been definitely established."

Advertising:—" . . . it penetrates deep into the pores. Its deep-cleansing lather gently rids pores of impurities."

Objection: — "That the true anatomic pore of the human skin is the tiny orifice of the sweat duct; and the tiny orifice at the outer end of the hair follicle is sometimes called a pore; and that in the normal skin no dirt or cleansing agent goes below such pores or depressions."

Advertising: — "Remember, this special ingredient not only gets rid of the cause of "B.O."—

"Lifebuoy penetrates the pores, purifies, stops "B.O."

". . . safely, surely eliminates "B.O."

Objection: — "That according to clinical test and scientific opinion, bacteria are present on the skin under normal conditions, and that perspiration has no offensive odor when it exudes from the sweat glands and ducts, but acquires an offensive odor as the bacteria cause decomposition of the perspiration intermingled with oil, desquamation of the skin and foreign substances; that while such decomposed material and most of the bacteria can be removed by the use of a good soap, and to a greater degree by the use of a good soap which also contains a sufficient amount of a special ingredient which is included in Lifebuoy Soap, thereby removing temporarily all perspiration odors, no soap will completely remove all such bacteria, and the remaining bacteria as they multiply will act upon newly excreted perspiration and produce some odor within from 24 to 48 hours; and that no permanent elimination of perspiration or body odor can be effected by the single application of Lifebuoy or any other soap."

Lux Flakes

Advertising: — "Puts new life into fabrics. Lux puts a feeling of newness—life—into materials that look and feel dead. I know that when Lux makes cloth look newer, it must really be renewing it. I call Lux 'the monkey gland treatment'."

Objection: — "That while the product Lux Flakes contains a minimum of free alkali and will not of itself fade or shrink fabrics, no soap will improve the original strength, color or quality of fabrics."

Lux Toilet Soap

Advertising: — "This care keeps million - dollar complexions flawless!"

Objection: — "That no soap can be relied upon to keep the skin flawless."

Advertising:—"Thousands and thousands of women are using Lux Toilet Soap because it's especially made to guard against Cosmetic Skin. Its active lather sinks deep into your pores."

Objection:—"That Lux Toilet Soap is not "compounded especially" to guard against cosmetic skin."

OIL REFINING

A brief study of various methods, equipment, and patents covering the continuous refining of fatty oils . . . sulfuric acid method for oil refining . . . an interesting discussion by Paul D. Boone, chemist and patent attorney, to be published in the next issue of SOAP.

"D&O" PERFUME MATERIALS

FOR THE SOAP AND ALLIED INDUSTRIES

"D & O" Essential Oils:
our own distillation

Clove, Nutmeg, Amyris Sandalwood, Patchouly, Guaiacwood.

"D & O" Petrodors:

Non-staining odors to mask all household insecticides.

"D & O" Tintodors:

Odor and color combined in one base, to perfume and color bath salts, brilliantines and paradichlorbenzene blocks and crystals.

"D & O" Perfume Bases:

Supplied in all varieties of odors, for toilet soaps, shampoos, shaving creams and kindred products.

"deLaire" Specialties:
produced by Fabriques deLaire, Issy, France

Miel pour Savons, Civette Artificial, Clymene.
Special perfumes to order.

"J. M & B" Fixodors:
produced by J Mero & Boyveau, Grasse, France

Benzoin, Girofle (clove), Orris, Labdanum, Olibanum, Styrax, Tolu

DODGE & OLCOTT COMPANY

180 Varick Street . . . . . New York, N. Y.

BOSTON : CHICAGO : PHILADELPHIA : ST. LOUIS : LOS ANGELES

Plant and Laboratories . . . . Bayonne, N. J.

D&O
ESTABLISHED IN 1798

Appeals Oil Excise Case

Loose-Wiles Biscuit Co. has appealed to the U. S. Supreme Court for review of the adverse judgment of the Circuit Court of Appeals in the company's legal action to secure return of excise taxes paid on coconut oil which it is claimed was processed before May 10, 1934, the effective date of the tax. The petition calls the attention of the Supreme Court to the conflict of decisions by lower courts on the "identical question" in the Armour and Cincinnati Soap Company suits for tax refunds. It states that in the Armour case, "the Government, instead of seeking a review of Judge Barnes' decision, settled the litigation by refunding a very large amount of taxes," whereas in the Cincinnati Soap Company case, "the Government has elected to raise issues of fact instead of seeking review upon the questions of law." The petition also states that the same question is involved in other pending cases, and that other claims for refund by other parties have been filed upon identically the same grounds as are urged and are now pending.

Green Oil Soap Firm Split

Green Oil Soap Co., Chicago, which was recently granted a petition to reorganize under the Bankruptcy Act, has been merged with Antiseptol Co., manufacturers of potash oil soaps, also of Chicago, it is announced, while Green Oil Sales Corp., sales organization of Green Oil Soap Co., has been acquired by Hicks Olein Soap & Chemical Co., of Chicago. Antiseptol Co., as a result of the merger will extend its manufacturing facilities and supply a complete line of green oil soaps, liquid soaps, shampoos, automobile soaps, hospital and surgical soaps, special cleansers, polishes, deodorants, insecticides and floor finishes. The present plant of Antiseptol Co., located on the northwestern side of Chicago, will be enlarged to take care of the extended line. E. Earl McDow, president of Antiseptol, will continue as head of the company under the new setup.

Hicks Olein Soap & Chemical Co., successors to Green Oil Sales Corp., will manufacture a line of vegetable oil soaps, disinfectants, solvents and cleaners. Its plant is located at 166 North Aberdeen St., Chicago. L. E. Hicks, who had been with Green Oil Soap Co. for the past twenty years, is vice president and active head of the company. William M. McKnight is treasurer and plant superintendent, and George Becker is in charge of laboratory and research.

In connection with the reorganization under the bankruptcy proceedings, creditors and stockholders of Green Oil Soap Co. were ordered to file all claims with the clerk of the United States District Court for the northern district of Illinois by July 15. The Court has appointed a referee to hear the claims, together with any objections, and to report his conclusions to the Court, following which, decisions will be given as to their settlement.

Countway on Management

Francis A. Countway, president of Lever Bros. Co., Cambridge, Mass., was one of several heads of leading industries to contribute to a booklet entitled "The Significance of Management," issued recently by the Seventh International Management Congress, which is to meet in Washington in September. Commenting on current management problems, Mr. Countway says, in part: "Within the present generation, management has made it possible to provide consumers with better goods and services at lower prices and at the same time to pay labor higher wages for shorter hours. Now management faces another problem, for, without halting progress, we must gain a greater measure of stability in economic life. To achieve this stability at a low level is easy, but to achieve it at an improving level calls for the utmost genius of management."

Oil and Fat Outlook

(*From Page* 29)

volume of cheaper fats for use in soap, and as it augments the supplies of refining foots.

Available supplies of whale oil on hand are currently larger than have been in recent years. Even though closer supervision over the operation of whaling expeditions under the American flag has been provided for, it is probable that again in 1938-39 more whaling will be carried on under the American flag than in recent years prior to the season of 1937-38. Thus, there is a probability that if the whaling season proves to be a good one production may be continued on the high level of 1937-38.

Turning to the imported oils, reports from the Philippines indicate that arrivals of copra have been exceptionally heavy in Manila and Cebu. An unusually good crop is expected for the year unless low prices discourage production. Stocks of coconut oil on December 31, 1937, were over twice as large as a year earlier and were the heaviest on record since September 30, 1934. Consumption during the first three months of 1938 was slightly under the corresponding 1937 quarter indicating a further increase in stocks is to be expected.

Soap Imports and Exports, 1935-37

Year	IMPORTS				EXPORTS			
	Castile 1,000 lb.	*Toilet* 1,000 lb.	*All Other* 1,000 lb.	*Total* 1,000 lb.	*Toilet or Fancy* 1,000 lb.	*Laundry* 1,000 lb.	*All Other*[1] 1,000 lb.	*Total* 1,000 lb.
1935	2,038	355	19,849[2]	22,442	7,637	12,134	7,350	27,121
1936	1,681	587	1,633	3,901	8,914	11,559	7,404	27,877
1937[3]	1,265	608	1,837	3,710	9,195	15,635	7,862	32,692

[1]Includes powdered or flaked; scouring soaps, pastes, bricks, and scouring powders; shaving soaps, creams, powders, and sticks; medicated and all other soap when reported. These data are the total of items separately reported.

[2]The increase in imports came in between October 1934 and September 1935, the period after the 3 cents per pound excise tax was placed on the major imported soap oils before the same rate of tax was imposed on "articles . . . manufactured . . . wholly or in chief value from any one or more of the oils subject to . . . tax."

[3]Preliminary.

A CANDID TALK... ON FLAKE SOAPS

FLAKE SOAPS have become popular members of many well-known lines. Greater saleability results when the detergent properties of P.Q. Silicates are used to the fullest extent.

It is true that excessive quantities of silicate of soda improperly incorporated have produced white, crumpled flakes. However, by correct application, an increased amount of P.Q. Silicate has been used by many soap makers to make a smooth clear product.

P.Q. experience in the application of silicates in household soaps dates back more than three-fourths of a century. Bulletin No. 1 reviews much of this. Send for a free copy.

EST. 1831 PQ Reg. U.S. Pat. Off.

PHILADELPHIA QUARTZ COMPANY

General Offices and Laboratory: 125 South 3rd Street, Philadelphia.
Chicago Sales Office: Engineering Building, 205 West Wacker Drive.

Works: Anderson, Ind., Baltimore, Md., Chester, Pa., Buffalo, N. Y., Kansas City, Kans., Rahway, N. J., St. Louis, Mo., Utica, Ill. Stocks in 60 cities.

P. Q. SILICATES OF SODA

Hand Paste Soaps

(*From Page* 21)

better. Some have odors all their own, indicating that the soap content might have sprung from fat or oil of very questionable ancestry. Attempts to cover the off-odor with another odor such as mirbane,—please note that mirbane is termed an odor and not a perfume,—is in some opinion to replace one bad stink with another. First, the soap base must be fresh and clean in odor,—and without any trace of rancidity. Then, the matter of perfuming can be considered, and in considering it, remember that this is 1938 and the odors which went over in a big way during the war, are not as a rule now in vogue. With hundreds of cheap compound odors, many of synthetic origin, on the market, the opportunity to get away from the sameness of sassafrassy camphor, methyl salicylate, citronella, and, above all, mirbane, is quite obvious. Every manufacturer, large or small, today has the opportunity to give his hand paste a distinctive odor without running up his cost appreciably over what it is with the old stand-bys. The strides which low-cost perfuming has made in the past few years, have been tremendous. Why not take advantage of them to make your product sell better?

In considering perfume for a hand paste, consider the conditions under which most of it is used,—in factories, garages, by mechanics, miners, and the like. This should rule out all sweet lady-like odors. It should turn attention to types of odors like pine,—and a host of suitable pine-needle odors are on the market today at a dollar or less,—and tar, eucalyptus, mint, clove, lemon, thyme, and hundreds of synthetic combinations designed for "he-man" products. The "disinfectant" type of odor, possibly a combination of thyme, eucalyptus, and tar, or a very small amount of cresol might have possibilities.

In this connection, it might be mentioned that the subject of "disinfectant" hand soaps has never received a great deal of attention commercially. In a paste hand soap, it would seem that the possibilities of incorporating a much larger proportion of medicaments,—enough so that the soap in use might have a real germicidal value,—should be enhanced by the physical character of the soap. For use in factories where skin troubles are common, it would seem that the sales appeal of such products might be considerable.

Although the great majority of hand pastes on the market are straight abrasive-soap products, there are or have been a few of other types. The so-called waterless cleansers can be dismissed as of small importance here. The use of solvents of one kind or another has received some attention. The trouble has been that the light solvents used are lost by evaporation very quickly. Where heavier oils, such as light machine oils, have been added, the lather has usually suffered if the addition were sufficient to have any real solvent action. Furthermore, in use in a machine shop, the hands of mechanics are usually quite greasy when they use a soap paste. It is also common practice to rub the hands and lower arms well with clean machine oil to loosen up the grime and then to remove this by the use of hand paste and water. Under these conditions, of course, any added solvent would be superfluous. This also is one of the reasons why a high-soap content paste finds greater favor in machine shops. Pastes which do not contain adequate soap, do not perform a satisfactory job of emulsification in removing this grime-laden oil.

As has been noted, almost every conceivable composition has been or is being tried in hand pastes. The number of manufacturers whose products are mediocre and who still believe that they have the finest product in the world is surprisingly large. There are others, probably the majority, who do not know any other way of making their hand soap except the method and formula they are using, and are glad to sell their product and get by in competition. But there is still room for new ideas, better products, and better selling in this field.

New Columbia Laboratory

Columbia Alkali Corp., division of Pittsburgh Plate Glass Co., has just completed a new 4-story research laboratory for its alkali plant at Barberton, O. Of brick construction, Colonial in effect, with limestone trim, the new building combines the latest in modern functional design with the newest in laboratory equipment.

The offices of the research director and his staff, which have been located on the second floor, have been built with ceilings of acoustic tile for absorbing noise. The inorganic and physical sections, the organic section, and the micro-analytical laboratory are located on the third floor. Industrial projects requiring the handling of materials on a larger scale than in the micro-analytical laboratory are found on the first floor. Here, also, is a technical service and physical testing laboratory, equipped for pH determination and identification by refractive index. The basement of the new building is used for pilot plant work.

"FTC Cracks Down..."

RIGID COPY REQUIREMENTS DEPRIVE SOAP MANUFACTURERS OF POPULAR MERCHANDISING APPEALS

SO SAY the headlines. And if this recent action of the Federal Trade Commission indicates a sterner attitude toward nationally advertised claims, soap manufacturers will have to adopt merchandising themes in future which can stand critical scrutiny of the censors.

All of which suggests a return to one of soap's basic appeals . . . its FRAGRANCE. Here is something the manufacturer can really emphasize without fear of censorship and with the certain knowledge that its appeal will strike a happy note in the mind of the consumer. And if his perfume formula has been carefully worked out—a skillful blend of first quality ingredients—his soap will possess an individuality around which plenty of romance, glamour and honest-to-goodness selling appeal can be built.

Our soap specialists will be glad to help you create such a fragrance for your product. Why not consult us with a view to availing yourself of this free service and experience?

"Fragrance Creates Sales Appeal"

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BRANCH STOCKS

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.

FACTORIES AT CLIFTON, N. J. AND SEILLANS (VAR) FRANCE

A *Fritzsche* PRODUCT for EVERY PURPOSE . . .

- **ESSENTIAL OILS**

  Your basic materials should be the finest that modern methods and scientific skill can produce. In using FRITZSCHE'S Essential Oils you are assured matchless purity and dependability.

- **AROMATIC CHEMICALS**

  Large selection and superlative quality characterize the materials in this group. Use them for finer aromatic effects and for greater economy.

- **FIXATIVES**

  We carry a complete line of fixatives, including Rose Crystals, one of the best all-around fixatives, also a group of Artificial Animal Scents—Musk, Civet, Castoreum and Ambergris—especially adaptable to soap making.

- **ANTI-OXIDANTS**

  These newly developed preservatives for soaps, animal and vegetable fats and oils are highly important to the soap manufacturer. Write us for full details concerning Oxidex.

- **BATH SALT PERFUMES**

  Combining perfume and color, our delightful Bath Perstels greatly simplify and facilitate the process of manufacture. Very economical. Complete information and list of blends will be sent upon request.

- **INSECTICIDES AND DISINFECTANTS**

  All materials offered by us under this heading are the results of years of research applied to this increasingly important phase of perfuming. Selection from the FRITZSCHE catalog assures uniform and unvarying quality of odor.

- **DEODORIZING COMPOUNDS**

  Technical products such as para blocks, naphthalene, cleansers, waxes, polishes, solvents, diluents, etc., require good, dependable deodorizing compounds in their formulae. For effective, low cost coverage we offer and recommend Neutroleum, Safrella, Javollal, Methalate "C", and others.

- **TOILET SOAP COMPOUNDS**

  Perfumes in this group have been specially prepared to meet the exacting demands of soap manufacture. Exquisite scents at a minimum cost. Consult our catalog.

- **LIQUID SOAP AND SHAMPOO PERFUMES**

  These perfumes are highly soluble and mix readily with liquid soaps. Simple to use, cost limits and strength of odor desired determine quantity required.

- **DENTAL AND ORAL FLAVORS**

  These flavors are of a special character, skillfully blended to impart pleasant, clean, refreshing taste effects. We are prepared also to create special flavor blends according to your specifications and for your exclusive use. Consult us freely.

- **SOAP COLORS**

  We supply soap colors to produce any desired tint. Send us description or sample of color to be matched for our specific recommendations.

Chicago Groups Hold Outing

The third in the combined series of golf tournaments sponsored by the Golf Auxiliary of the Chicago Drug and Chemical Association and the Chicago Perfumery, Soap and Extract Association was held on July 12 at the Medinah Country Club. A banquet was given in the evening, at which tournament prizes were awarded. The prize winners were: Class A, E. F. Smith, first; A. C. Drury, second; T. B. Singleton, third; Class B, R. G. Brown, first; F. Z. Woods, second; S. M. Lind, third; Class C, Clayton Lawson, first; George Epstein, second; Paul Gibney, third; Class D, W. R. Nay, first; A. J. Ratz, second; J. H. Helfrich, third. Special prizes were won by J. W. Painton, J. E. Wehmer, C. S. Curtis and H. G. Larson. F. A. Llewellyn and A. Rasmussen were awarded guest prizes. Another tournament will be held at the Wilmette Country Club on August 9.

New Colgate Gift Offer

With every 37 cent purchase of its toilet goods, Colgate-Palmolive-Peet Co., Jersey City, N. J., is currently offering a gift of a 50 cent bottle of its new gardenia sented, "Eau de Cologne" perfume. The gift offer is being made to introduce the new perfume.

FTC Checks Ho-Ro-Co

Ho-Ro-Co Mfg. Co., St. Louis, cosmetic manufacturer, has entered into stipulations with the U. S. Federal Trade Commission agreeing to discontinue representing that "Ho-Ro-Co Skin and Scalp Soap," or any of its ingredients, is absorbed by the pores.

FTC Checks Arvil Claim

Arvil Co.. hair preparation manufacturers, Chicago, has been charged by the U. S. Federal Trade Commission with unfair competition in the sale of "Dawn Shampoo." The complaint states that the manufacturers advertise that "Dawn Shampoo" will give permanent relief from dandruff or itching scalp, when such a representation is not true.

PREPARED FROM THE FINEST MATERIALS AND ENTIRELY FREE FROM ADULTERANTS

PRICE'S *triple pressed* STEARIC ACID is used by leading manufacturers of the finest toilet preparations, shaving creams and toilet soaps. Of guaranteed English manufacture, it is highly crystalline and white in color.
Melting point is 130°-133° Fahrenheit.
World famous for its unvarying uniformity in quality.
Packed in slabs of about one inch thickness in double burlap bags with a third protective inner bag forming a muslin liner.

Quotations for carloads or less upon application to exclusive American Representatives:

ORBIS

PRODUCTS CORPORATION

215 PEARL STREET, NEW YORK · FACTORY & LABORATORY, NEWARK, N.J.

CHICAGO
831 N. Wabash Ave.

PHILADELPHIA
610 Brown Building

BOSTON
89 Broad Street

CLEVELAND
15201 Elderwood Ave.

Water Soluble Gums	Waxes	Cosmetic Raw Material	Fruit Flavors
Filter Paper	Stearic Acid	Oleo Resins	Food Colors
Aromatics	Essential Oils	Perfume Bases	Quince Seed
Rice Starch	Zinc Oxide French	Olive Oil	Irish Moss

MANUFACTURED BY PRICE'S OF LONDON, ENGLAND

Contracts Awarded

Fort Mason Soap Awards

Unity Sanitary Supply Co., New York, was awarded the contract on a quantity of toilet soap at 1.39c in a recent opening by the U. S. Army Quartermaster at Fort Mason, San Francisco. On a quantity of laundry soap, Colgate-Palmolive-Peet Co., Berkeley, Calif., was awarded the contract at 2.99c. On quantity of grit soap, Newell-Gutradt Co., San Francisco, was awarded the contract at 3c. On an additional quantity of toilet soap, Colgate-Palmolive-Peet Co. was awarded the contract at 1.4233c.

Low Liquid Soap Bidder

Crystal Soap & Chemical Co., Philadelphia, was low bidder on 9,900 gallons of liquid soap at 15.95c in a recent opening by the Bureau of Supply, Procurement Division, U. S. Treasury Dept., at Washington. On 90,000 pounds of chip soap, Kirkman & Son, Brooklyn, were low bidders at 5.65c.

Low Green Soap Bidder

Green Oil Sales Corp., Chicago, was low bidder on 4,000 pounds of green soap at $380 in a recent opening by the Procurement Division of the U. S. Veterans Administration at Washington.

Low Treas. Dept. Bidders

Hunnewell Soap Co., Cincinnati, was low bidder on 7,500 pounds of grit soap at 3.6c in a recent opening by the Bureau of Supply, Procurement Division, U. S. Treasury Department at Washington. On 4,000 pounds of automobile soap, James Good, Inc., Philadelphia, was low bidder at 3.94c.

Omaha Soap Awards

Procter & Gamble Distributing Co., Omaha, Nebr., was awarded the contract on 1,500 pounds of laundry soap at 3.86c in a recent opening by the quartermaster for the U. S. Army Engineer Corps at Omaha. On 720 pounds of toilet soap, 250 pounds of mechanics' soap and 1,500 pounds of soap powder, Swift & Co., Omaha, were awarded the contract at 21c, 6.3c, and 3.09c, respectively. On 1,500 pounds of flake soap, Haskins Bros. & Co., Omaha, were awarded the contract at 6.38c.

Post Office Dept. Awards

Imperial Products Co., Philadelphia, was awarded the contract for 7,600 gallons of metal polish at 26.5c per gallon, in a recent opening by the U. S. Post Office Department, at Washington. On three lots of scouring soap totaling 1,439 barrels, Imperial Products Co. was also awarded the contract at prices of 1.63c, 2.03c, and 2.57c per pound. On three lots of automobile soap, Harley Soap Co., Philadelphia, was awarded the contract at 3.9c, 3.5c, and 3.3c per pound. On 140,000 pounds of scouring soap, Armour & Co., Chicago, were awarded the contract at 1.2c per pound.

Fort Mason Soap Award

Newell-Gutradt Co., San Francisco, was awarded the contract on a quantity of laundry soap at 2.79c in a recent opening by the U. S. Army Quartermaster at Fort Mason, San Francisco.

Brooklyn Awards

J. Eavenson & Sons, Camden, N. J., were awarded the contract on 220,000 pounds of laundry soap at 5.61c and 26,400 pints of metal polish at 6.9c per pint in a recent opening by the U. S. Army Quartermaster at Brooklyn.

Fort Sam Houston Awards

Colgate-Palmolive-Peet Co., Jersey City, N. J., was awarded the contract on 26,100 pounds of soap chips at 6.58c, 2,700 pounds of chip soap at 7.61c, and 2,000 pounds of laundry soap at 6.77c in a recent opening by the U. S. Army Quartermaster at Fort Sam Houston, Texas. On 40,000 pounds of laundry soap at 1.47c, and 45,000 pounds of laundry soap at 1.8c, Solvay Sales Corp., Chicago, was awarded the contract. On 225 pounds of soap powder, H. Kohnstamm & Co., Los Angeles, were awarded the contract at 8.5c. Armour & Co., Chicago, were awarded the contract on 48 cakes of toilet soap at 3.2c, and 200 pounds of cleaning soap at 6.8c. Rosenberg Bros., Chicago, were awarded the contract on 3,500 pounds of toilet soap at 8c, and 2,160 pounds of chip soap at 7.6c. On 2,160 pounds of chip soap, Gillam Soap Works, Fort Worth, Tex., was awarded the contract at 8c. On 38,000 pounds of soap chip, Pacific Soap Co., San Diego, Calif., was awarded the contract at prices of 6.6c and 3.5c. On 400 pounds of laundry soap, Peaslee-Gaulbert Corp., Louisville, was awarded the contract at 8.5c.

St. Louis Soap Awards

Procter & Gamble Distributing Co., St. Louis, was awarded the contract on 23,460 pounds of laundry soap at 3.41c in a recent opening by the U. S. Army Quartermaster at St. Louis. On 437½ pounds of grit soap, Day & Frick, Philadelphia, were awarded the contract at 3.556c.

Jeffersonville Soap Awards

Armour & Co., Chicago, were awarded the contract on 5,000 pounds of soap chips at 7.8c per pound, and 5,000 cakes of toilet soap at $.0094 per cake in a recent opening by the U. S. Army Quartermaster at Jeffersonville, Ind. On 15,000 cakes of grit soap, Hunnewell Soap Co., Cincinnati, was awarded the contract at 1.9c per cake. On 10,000 pounds of trisodium phosphate, Peaslee-Gaulbert Corp., Louisville, was awarded the contract at $2.39 per hundred pounds.

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VI ANALYTICAL METHODS. Methods of sampling and chemical analysis for control during process and analysis of finished products. Analysis oils, fats, soaps of all kinds, glycerine, etc. Includes official methods of analysis for numerous products. 75 pages.

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New Trade Marks

The following trade-marks were published in the July issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks Filed

WONDER BOY—This in outline letters describing detergent and water conditioner. Filed by Phosphate Mining Co., New York, Nov. 9, 1937. Claims use since Oct. 28, 1937.

GILT EDGE—This in solid letters describing cleansing powder. Filed by Crown Products Corp., San Francisco, March 5, 1938. Claims use since Dec. 21, 1937.

BLUE DIAMOND BRAND—This in shaded letters describing toilet and laundry soaps, with drawing of a diamond. The word "Brand" is disclaimed apart from the mark. Filed by Hearn Department Stores, Inc., New York, March 29, 1938. Claims use since Sept. 15, 1937.

SPIC AND SPAN—This in solid letters with a drawing representing negro maid and chauffeur, describing metal polish. Filed by Charpure Co., Decatur, Ga., May 20, 1938. Claims use since May 2, 1938.

BEND-BEND—This in solid letters with a drawing of a woman's head describing shampoo. Filed by W. A. Hurst, Avera, Miss., June 8, 1937. Claims use since Feb. 18, 1937.

VEET—This in solid letters describing shampoo. Filed by Gardner Mfg. Co., Philadelphia, July 9, 1937. Claims use since Feb. 2, 1937.

Geometric design for package describing moth and roach killers in powder form. Filed by Mallinckrodt Chemical Works, St. Louis, Jan. 5, 1938. Claims use since April, 1935.

SAF-T-DED RAT KILLER—This in outline letters with a drawing of a rat, describing preparation for killing rats. The words "Rat Killer" are disclaimed apart from the mark. Filed by One-Spot Co., Elkridge, Md., Jan. 14, 1938. Claims use since Jan. 1, 1938.

O-WEN-O—This in solid letters describing treatment for Athlete's Foot. Filed by Oweno Laboratories, East Cleveland, O., March 25, 1938. Claims use since Nov., 1937.

SUEDE—This in solid letters describing bath salts. Filed by Henri Bendl, Inc., New York, March 31, 1938. Claims use since March 22, 1938.

KIX—This in solid letters describing insecticide. Filed by Hammond Paint & Chemical Co., Beacon, N. Y., April 7, 1938. Claims use since Nov. 10, 1936.

PIPEMASTER—This in solid letters describing drain pipe cleaner. Filed by Bray Chemical Co., Chicago, May 6, 1938. Claims use since July 13, 1937.

INALIN 144—This in solid letters describing treatment for Athlete's Foot. Filed by Gross Medications, Rome, Ga., May 12, 1938. Claims use since April 27, 1938.

LUFRIDENT—This in solid letters on reverse plate describing tooth powder. Filed by Wm. P. Marion Co., Brooklyn, June 4, 1938. Claims use since May 3, 1938.

SPRAYCOP—This in stencilled letters describing fungicides. Filed by General Chemical Co., New York, June 7, 1938. Claims use since May 11, 1938.

VASELINE—This in solid letters describing shampoo. Filed by Chesebrough Mfg. Co., New York, June 13, 1938. Claims use since Feb., 1936.

NU SPARKLE—This in solid letters describing liquid glass cleaner. Filed by Coastal Chemical Co., Savannah, Ga., Oct. 29, 1937.

ELITE COLD CREAM SOAP—This in outline letters on decorative oval-shaped design, describing soap. The words "Cold Cream Soap" are disclaimed apart from the mark. Filed by F. W. Woolworth Co., New York, May 13, 1938. Claims use since June 6, 1932.

WIN-BRITE — This in solid script describing preparation for cleaning windows. The word "Brite" is disclaimed apart from the mark. Filed by Win-Brite Co., Muncie, Ind., May 23, 1938. Claims use since April 28, 1938.

LIME LIGHT—This in solid letters describing tooth paste. Filed by Edgar C. Kaye, Gurnee, Ill., June 9, 1937. Claims use since Feb. 4, 1937.

DETROIT DENTAL AID COMMISSION TOOTH POWDER — This in shaded letters on side of container, which is shaped like talcum powder container, describing tooth powder. The words "Detroit Dental Aid Commission Tooth Powder" apart from the mark and the representation of the container are disclaimed. Filed by Detroit District Dental Society, Detroit, Jan. 25, 1938. Claims use since June 1, 1933.

SHRINE OF BEAUTY—This in solid letters describing soapless shampoos. The word "Beauty" is disclaimed apart from the mark. Filed by Helen C. Carter, Los Angeles, April 9, 1938. Claims use since Dec. 22, 1937.

LOTIER—This in solid letters describing shampoos. Filed by James C. Cassone, Allentown, Pa., April 26, 1938. Claims use since April 13, 1938.

HEALTH GUARD, THE SAFE WAY ANTISEPTIC—This in solid letters on design in the shape of a shield, with head of Roman warrior, describing antiseptic. The word "Antiseptic" is disclaimed apart from the mark. Filed by Health Guard Laboratories, Muncie, Ind., April 30, 1938. Claims use since Feb. 26, 1938.

HUMIDUST LAUGHS AT RAIN—This in solid letters with fanciful illustration of rain cloud laughing, describing insecticides. Filed by Stauffer Chemical Co., New York, April 30, 1938. Claims use since May, 1937.

GLO-DENT—This in solid letters describing tooth powder. Filed by Glo-Dent Tooth Powder Co., Chicago, May 2, 1938. Claims use since March 7, 1938.

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BCM — This in solid letters, the first two smaller than the "M" and placed beneath it, describing insecticides. Filed by General Chemical Co., New York, May 23, 1938. Claims use since Jan., 1930.

GUSTO—This in solid letters within circle, describing glass cleaning preparations. Filed by Bennett, Inc., Cambridge, Mass., Aug. 19, 1937. Claims use since June 18, 1937.

DAIR-I-SAN—This in outline letters describing dairy cleanser. Filed by John T. Stanley Co., New York, Oct. 8, 1937. Claims use since March 24, 1936.

CLEAR-O-WASH—This in solid letters describing washing powder. The words "Clear" and "Wash" are disclaimed apart from the mark. Filed by Chill Foam Corp. of America, Detroit, Nov. 11, 1937. Claims use since Oct. 15, 1937.

DISOLV-O-CIDE—This in solid letters describing toilet bowl cleaner. Filed by Chemical Process Co., Dallas, Jan. 27, 1938. Claims use since July 1, 1937.

HOUS HO SMOOTH SAILING WASHING COMPOUND—This in shaded letters on drawing of sail boat, describing cleaning compound. The words "Washing Compound" are disclaimed apart from the mark. Filed by James Borland, Bloomington, Ind., March 10, 1938. Claims use since Sept. 1, 1937.

QUIK RUB—This in outline letters on drawing of lion rampant describing polishing agent. The words "Quik Rub" are disclaimed apart from the drawing. Filed by Leon Finch, Ltd., Los Angeles, March 30, 1938. Claims use since April 1, 1937.

WHIZ—This in outline letters on geometrically designed circle describing chemical cleaning compounds. Filed by R. M. Hollingshead Corp., Camden, N. J., April 14, 1938. Claims use since May 16, 1934.

CLICK—This in solid letters describing cleaner. Filed by Dri-Brite, Inc., St. Louis, April 23, 1938. Claims use since March 15, 1938.

TEMU—This in solid letters describing soap. Filed by Max Wulfsohn, Inc., New York, April 29, 1938. Claims use since May 15, 1937.

FASCINATION — This in solid script with fanciful drawing showing bowl of fruit, describing shampoos. Filed by Lundborg Perfumer, Inc., New York, July 25, 1936. Claims use since March 14, 1874.

MAR-VIN DISH WASHING COMPOUND—This in outline letters on drawing of a dish, describing dish washing compounds. The words "Dish," "Washing," and "Compound" are disclaimed apart from the mark. Filed by Mar-Vin Dispenser & Products Co., New York, Jan. 4, 1938. Claims use since Aug. 1, 1937.

PRIM—This in shaded letters on rectangular shaped drawing for container, describing liquid cleaner. Filed by Prim Corp., St. Louis, March 26, 1938. Claims use since Feb. 8, 1938.

BRANDHEFETON—This in solid letters describing brewers' cleaning compounds. Filed by A. Gusmer, Inc., Hoboken, N. J., March 30, 1938. Claims use since March 25, 1938.

HYDEGRE—This in solid letters describing automobile cleaner. Filed by Joseph A. Tumbler Laboratories, Baltimore, April 19, 1938. Claims use since September, 1934.

JEWELGLO—This in solid letters describing jewelry cleaner. Filed by Milton Weingarten Co., San Francisco, May 2, 1938. Claims use since March 30, 1938.

MULSINE—This in solid letters describing cleaning compounds. Filed by Turco Products, Inc., Los Angeles, May 14, 1938. Claims use since Aug. 10, 1935.

GLYST—This in solid letters describing glass cleaning preparation. Filed by Turco Products, Inc., Los Angeles, May 14, 1938. Claims use since June 1, 1937.

PAULA'S—This in solid script accompanied by full-length drawing of a woman, describing bath salts. Filed by Paulian Drug & Chemical Co., St. Louis, Feb. 23, 1937. Claims use since Feb. 29, 1936.

MIRUS—This in solid letters describing medicated shampoos. Filed by Mirus Laboratories, Inc., New York, Feb. 2, 1938. Claims use since Sept. 1, 1937.

Black band surrounding red tube describing dentifrices. The representation of the tube is disclaimed apart from the mark. Filed by No-D-Ka Co., West Springfield, Mass., March 23, 1938. Claims use since Feb. 19, 1938.

DO-ALL—This in solid letters describing disinfectant. Filed by Do-All Co., Elmira, N. Y., April 7, 1938. Claims use since March 19, 1938.

PRUFOL—This in shaded letters describing moth-proofing liquid. Filed by Boston Drug & Chemical Co., Boston, April 26, 1938. Claims use since April 1, 1938.

LARVABAN MOTH ELIMINATOR —This in outline letters on geometric design describing moth killer. The words "Moth Eliminator" are disclaimed apart from the mark. Filed by August Trautman, New York, May 2, 1938. Claims use since April 14, 1938.

MERLAZINE—This in solid letters describing antiseptic. Filed by E. R. Squibb & Sons, New York, May 7, 1938. Claims use since April 28, 1938.

HI-SEAL—This in solid letters describing floor polish. Filed by Histosan, Inc., Ivoryton, Conn., April 22, 1938. Claims use since Dec. 13, 1937.

ALURE—This in solid letters describing soap. Filed by Hewitt Soap Co., Dayton, O., Aug. 30, 1937. Claims use since March 10, 1937.

FOM-OL—This in solid letters describing shampoos. Filed by Clairol, Inc., New York, June 28, 1937. Claims use since May 8, 1935.

TASH-MA—This in solid letters with drawing of the Taj Mahal, describing bath salts. Filed by Myra B. and Hortense S. Marcus, New York, Jan. 25, 1938. Claims use since June 1, 1937.

VOLOPHEN—This in solid letters describing germicide. Filed by Wm. S. Merrell Co., Cincinnati, April 6, 1938. Claims use since March 24, 1938.

BLACK FLAG—This in solid letters with drawing of dog's head on the container, describing dog soap. Filed by Black Flag Co., Baltimore, Feb. 7, 1938. Claims use since Jan. 25, 1938.

(*Turn to Page* 121)

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Third,—we want to warn both old and new subscribers once again to send subscriptions direct to SOAP, 254 West 31st St., New York, and not to pay any individual. This fake subscription racket is as old as the hills,—and it still flourishes. Do not let them get you! Don't pay out money for any subscription to anybody whom you do not know.

THE PUBLISHERS.

Raw Material Markets

(As of July 28, 1938)

NEW YORK — The soap and sanitary chemicals raw materials market continued firm during the period just closed, although the buying activity which seemed to be getting under way in the preceding period diminished considerably. The trend of prices continued upward, with offerings of the various materials said to be light. The reported use of fats and oils in the manufacture of soap in 1937 was about 1,660,000,000 pounds. This was more than for any year reported except 1929, when about 1,700,000,000 pounds were used. In 1938, the total consumption for all purposes of inedible tallow, coconut, palmkernel and palm oils for the first quarter was reported to be about 15 per cent less than the same period of the previous year. Among the principal oil and fat price changes during the period was an advance of ¾c per pound in the price of crude cottonseed oil, an increase of ½c per pound in the price of tallow and grease, an advance of 6c per gallon in the price of denatured olive oil, and advances of from ¼c to ½c per pound in the prices of corn oil, lard oil, soybean oil and babassu oil. In the list of essential oils, anise oil prices rose to a basis of 85c to 90c per pound, peppermint oil was moved up to a basis of $2.15 to $2.35 per pound, and an advance of 15c to 20c per pound was made in the price of cassia oil.

OILS AND FATS

Coconut Oil

The market for crude coconut oil developed an easier tone during the period just closed. The increase in consumption reported during the last period was apparently just a temporary spurt. There were some inquiries reported, but few transactions were noted. Crude oil in tank cars remained at 3⅜c per pound. Quotations on corn oil, however, advanced ⅜c per pound in a firmer market, which was said to be a reflection of the upward trend shown recently by competing oils. Lard oil also advanced ⅜c to ⅝c per pound. There was said to be an improvement in demand for lard oil, but on the whole consumers appeared backward about purchasing to any important extent. Soybean oil moved upward to a basis of 6.7c per pound in tank cars on spot. The rise was due, it was said, to a more active demand. The U. S. Dept. of Agriculture crop report for July estimated soybean acreage grown in 1938 to be almost 10 per cent over 1937. Babassu oil moved ¼c per pound higher.

Cottonseed Oil

A development of interest in the cottonseed oil market during this period was the publication of a report from the U. S. Census Bureau showing the consumption for the 11 months of the current season to be larger than had been expected. The figures caused buying by trade interests and commission houses, causing a moderate advance in prices, which was followed by a reactionary movement. The period closed with crude cottonseed oil quoted at 7.5c, an increase of ¾c per pound over the preceding period. Consumption for the current season was given at 3,935,717 barrels, against 2,718,446 barrels in the same period last season. Production of crude oil during the current season was reported at 1,920,514,856 pounds, against 1,350,589,063 pounds for the same period last season.

Olive Oil

Denatured olive oil advanced 6c per gallon during this period due to a reported shrinkage in supplies and an increase in demand. Olive oil foots also moved higher, registering an increase of ⅛c per pound because of an increase in demand.

Tallow

Buying activity in the tallow market as reported last month diminished to an occasional inquiry from buyers of moderate lots during this period. Large consumers were said to be holding off to await further developments in the market for other commodities. The market, however, continued firm, with prices moving upward ½c per pound. The market for grease was also firm along with tallow, and moved ½c per pound higher. A fair demand was reported.

PERFUMING MATERIALS

Anise Oil

Prices for anise oil turned definitely upward during this period due to lack of offerings from the source, caused by the war in southern China. Conditions in China prevented normal movement of the oil. Quotations rose to a basis of 85c to 90c per pound, and it was said that unless there was a substantial rise in quantities offered for shipment that these values would likely prevail. The war in China was also responsible for the increase of 15c to 20c per pound in the price of cassia oil.

Peppermint Oil

Quotations on natural peppermint oil moved up to tre basis of $2.15 to $2.35 per pound, due to discouraging reports regarding the growing crop in the middle west. Holders of the carry-over from last season were not inclined to sell except at highest prices. A crop far short of expectations was said to be certain. Cedarleaf prices were lower at 70c to 75c per pound in drums and 73c to 78c in cans.

◆

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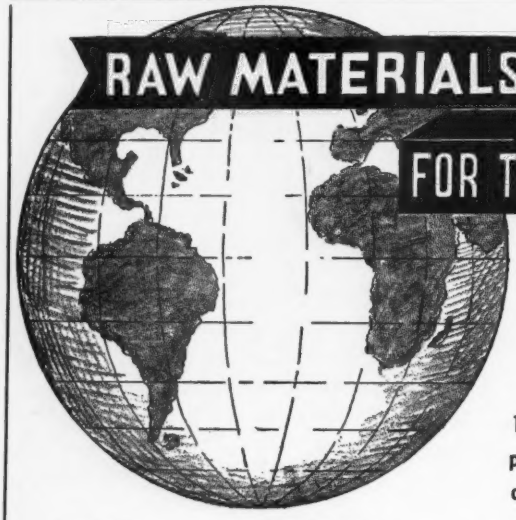

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Raw Material Prices

(As of July 27, 1938)

Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C. P., drums	lb.	$ .05¾	$ .06¼
Acid, Boric, bbls., 99½%	ton	106.00	138.00
Cresylic, drums	gal.	.73	.74
Low boiling grade	gal.	.78	.80
Oxalic, bbls.	lb.	.10¾	.12
Adeps Lanae, hydrous, bbls.	lb.	.16	.18
Anhydrous, bbls.	lb.	.17½	.19
Alcohol, Ethyl, U.S.P., bbls.	gal.	4.56½	4.61½
Complete Denat., SD 1, drums, ex.	gal.	.31	.33
Alum. Potash lump	lb.	.036	.039
Ammonia Water, 26°, drums	lb.	.02¼	.02½
Ammonium Carbonate, tech., bbls.	lb.	.08	.12½
Bentonite 1, works	ton	—	16.00
Bentonite 2, works	ton	—	11.00
Bleaching Powder, drums	100 lb.	2.25	3.35
Borax, pd., cryst., bbls., kegs	ton	58.00	74.00
Carbon Tetrachloride, car lots	lb.	—	.05¼
L. C. L.	lb.	.05¾	.08½
Caustic, see Soda Caustic. Potash Caustic			
China Clay, filler	ton	10.00	25.00
Cresol, U.S.P., drums	lb.	.10½	.11
Creosote Oil	gal.	.13½	.14½
Feldspar (200 to 325 mesh)	ton	14.00	15.00
Formaldehyde, bbls.	lb.	.05¾	.06¼
Fullers Earth	ton	10.00	30.00
Glycerine, C. P., drums	lb.	.14¼	.14¾
Dynamite, drums	lb.	.12¾	.13¼
Saponification, drums	lb.	.09½	.09¾
Soap, lye, drums	lb.	.08½	.08¾
Hexalin, drums	lb.	—	.30
Kieselguhr, bags	ton	—	35.00
Lanolin, see Adeps Lanae.			
Lime, live, bbls.	per bbl.	—	2.45
Mercury Bichloride, kegs.	lb.	.99	1.13
Naphthalene, ref. flakes, bbls.	lb.	.06¾	.07
Nitrobenzene (Wyrhane) drums	lb.	.07¼	.09
Paradichlorbenzene, bbls., kegs	lb.	.12½	.15½
Petrolatum, bbls. (as to color)	lb.	.02¾	.08⅛
Phenol (Carbolic Acid), drums	lb.	.14½	.15½
Pine Oil, bbls.	gal.	.52	.59
Potash, Caustic, drums	lb.	.07	—
Flake	lb.	.07¼	.07½
Potassium Carbonate, solid	lb.	.06½	.06¾
Liquid	lb.	.03	.03½
Pumice Stone, powder	100 lb.	3.00	4.00
Rosins (600 lb. bbls. gross for net)—			
Grade B to H, basis 280 lbs.	bbl.	4.70	5.67½
Grade K to N	bbl.	5.67½	6.50
Grade WG and X	bbl.	7.00	7.55
Wood FF Spot	bbl.	5.80	6.25
Rotten Stone, pwd. bbls.	lb.	.02½	.04½
Silica	ton	20.00	27.00
Soap, Mottled	lb.	.04⅛	.04½
Olive Castile, bars	lb.	.22	.26
Olive Castile, powder	lb.	.28	.33
Powdered White, Neutral	lb.	.20	.22
Olive Oil Foot, bars, 68-70%	lb.	.09	.09½
Green, U.S.P.	lb.	.11	.13½
Tallow Chips, 88%	lb.	.07½	.08½
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.08	1.35
Car lots, in bulk	100 lb.	—	.90
Soda Caustic, cont., wks., solid	100 lb.	—	2.30
Flake	100 lb.	—	2.70
Liquid, tanks	100 lb.	—	1.95
Soda Sal., bbls.	100 lb.	$1.10	$1.30
Sodium Chloride (Salt)	ton	15.00	15.60
Sodium Fluoride, bbls.	lb.	.07¼	.08¾
Sodium Hydrosulphite, bbls.	lb.	.16	.17
Sodium Silicate, 40 deg., drum	100 lb.	.80	1.20
Drums, 52 deg. wks.	100 lb.	1.40	1.80
Tar Acid Oils, 15-25%	gal.	.22	.28½
Triethanolamine	lb.	.20	.22
Trisodium Phosphate, bags, bbls.	lb.	.02	.03
Zinc Oxide, lead free	lb.	.06½	.07¾
Zinc Stearate, bbls.	lb.	.21	.23

Oils — Fats — Greases

Babassu, tanks, futures	lb.	.06⅝	—
Castor, No. 1, bbls.	lb.	.09¾	.10½
No. 3, bbls.	lb.	.09¼	.10
Coconut (without excise tax)			
Manila, Tanks. N. Y.	lb.	.03⅜	—
Tanks, Pacific Coast, futures	lb.	.03⅛	—
Fatty Acids	lb.	.09	.09½
Copra, bulk, coast	lb.	.02	—
Corn, tanks, mills	lb.	.07⅝	.07¾
Fatty Acids	lb.	.06¾	.07
Cottonseed, crude, tanks, mill	lb.	.073	.075
PSY, futures	lb.	.085	.088
Fatty Acids	lb.	.06¼	.06¾
Soap stock 60-62%	lb.	.02⅝	.02⅞
Soap stock 65%	lb.	.03⅝	.03⅞
Foots (50% basis)	lb.	.01⅜	.01½
Greases, choice white bbls., f.o.b.			
Chicago	lb.	.05¾	.05⅞
Yellow	lb.	.04¾	.04⅞
House	lb.	.04¾	.04⅞
Lard Oil.			
Extra, bbls.	lb.	—	.09½
Extra, No. 1, bbls.	lb.	—	.09
No. 2, bbls.	lb.	—	.08½
Linseed, raw, bbls.	lb.	.0860	.0880
Tanks, raw	lb.	.0800	.0820
Boiled, 5 bbl. lots	lb.	.0940	.0960
Oleo Oil, No. 1, bbls., N. Y.	lb.	.09¼	—
No. 2, bbls., N. Y.	lb.	.08½	—
Olive, denatured, bbls., N. Y.	gal.	.94	.98
Foots, bbls., N. Y.	lb.	.08	.08⅛
Palm, shipment	lb.	.0290	—
Palm Kernel, shipment	lb.	.0415	—
Red Oil, distilled, bbls.	lb.	.08⅜	Nom.
Saponified, bbls.	lb.	.08⅜	Nom.
Tanks	lb.	.07½	Nom.
Sesame Oil, dms.	lb.	.10¼	.10½
Soya Bean, domestic tanks, crude	lb.	.0670	—
Stearic Acid.			
Double pressed	lb.	.11	.12
Triple pressed, bgs.	lb.	.13¾	.14¾
Stearine, oleo, bbls.	lb.	.06½	.06¾
Tallow, special, f.o.b. plant	lb.	.05⅛	—
City, ex. loose, f.o.b. plant	lb.	.05⅜	—
Tallow oils, acidless, tanks, N. Y.	lb.	.08¼	—
Bbls., c/l N. Y.	lb.	.08¾	—
Teaseed Oil, crude	lb.	.08	.08¼
Whale, refined	lb.	.0830	.0850

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Palm, Pure **Castor, Pure**

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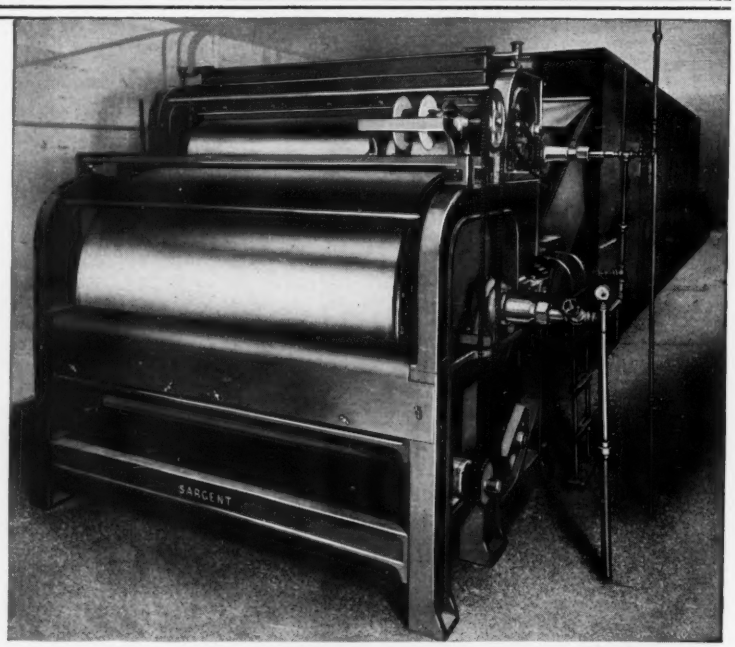

AS the title indicates, the Rolls are NEW and the entire machine is NEW, many valuable improvements having been perfected until this latest Sargent development is now one of the very finest Rolls obtainable.

To the soap manufacturer, the most important angle is to have a *thin, uniform chip* . . . readily accomplished by these new Rolls being expertly machined, ground and set. Finest grade of cast iron. Vari-speed controls on both Rolls insures easy adjustment . . . every part accessible. Drive improvements reduce the horsepower used. Changes made at a minute's notice. The Dryer is entirely re-designed. Its housing gives better insulation and cuts down steam consumption per hour. Other valuable changes have been made in the circulating and exhaust air systems . . . and all *fans* are *direct motor driven.*

C. G. SARGENT'S SONS CORP. GRANITEVILLE MASS., U. S. A.

(As of July 27, 1938)

Essential Oils

Almond, Bitter, U.S.P.	lb.	$2.05	$2.75
Bitter, F. F. P. A.	lb.	2.00	2.50
Sweet, cans	lb.	.65	.68
Anise. cans, U.S.P.	lb.	.85	.90
Bay tins		1.35	1.50
Bergamot, coppers	lb.	3.90	4.00
Artificial	lb.	1.25	1.30
Birch Tar, rect. tins	lb.	.70	.75
Crude, tins	lb.	.16	.17
Bois de Rose, Brazilian	lb.	1.55	1.60
Cayenne	lb.	1.50	1.75
Cade, cans	lb.	.44	.45
Cajeput, native, tins	lb.	.50	.66
Calamus, tins	lb.	4.25	4.50
Camphor, Sassy, drums	lb.	.19	.20
White, drums	lb.	.17	.18
Cananga, native, tins	lb.	1.25	1.30
Rectified, tins	lb.	1.80	1.85
Caraway Seed	lb.	1.90	2.00
Cassia, Redistilled, U.S.P.	lb.	1.00	1.10
Cedar Leaf, tins	lb.	.73	.78
Cedar Wood, light, drums	lb.	.28	.30
Citronella, Java, drums	lb.	.38	.40
Citronella, Ceylon, drums	lb.	.35	.35½
Clove, U.S.P., tins	lb.	1.02	—
Eucalyptus, Austl., U.S.P., cans	lb.	.35	.37
Fennel, U.S.P., tins	lb.	1.10	1.15
Geranium, African, cans	lb.	3.25	4.50
Bourbon, tins	lb.	2.65	3.00
Turkish	lb.	2.05	2.25
Hemlock, tins	lb.	1.05	1.10
Lavender, U.S.P., tins	lb.	2.00	5.25
Spike, Spanish, cans	lb.	1.05	1.10
Lemon, Ital., U.S.P.	lb.	3.20	3.90
Cal.	lb.	2.50	—
Lemongrass, native, cans	lb.	.38	.40
Linaloe, Mex., cases	lb.	1.25	1.30
Nutmeg, U.S.P., tins	lb.	1.20	1.25
Orange, Sweet, W. Ind., tins	lb.	1.95	2.00
Italian cop	lb.	2.25	3.25
Distilled	lb.	—	.70
Cal.	lb.	.95	1.25
Origanum, cans, tech	lb.	.90	1.60
Palmarosa	lb.	2.05	2.25
Patchouli	lb.	3.75	8.00
Pennyroyal, dom.	lb.	1.40	1.45
Imported	lb.	1.35	1.40
Peppermint, nat., cans	lb.	2.15	2.40
Redis., U.S.P., cans	lb.	2.40	2.65
Petitgrain, S. A., tins	lb.	1.00	1.05
Pine Needle, Siberian	lb.	.95	1.00
Rose, Natural	oz.	5.25	22.50
Artificial	oz.	2.00	8.00
Rosemary, Spanish, tins	lb.	.56	.75
drums	lb.	.51	.70
Sandalwood, E. Ind., U.S.P.	lb.	4.75	4.80
Sassafras, U.S.P.	lb.	1.00	1.05
Artificial, drums	lb.	.37	.38
Spearmint, U.S.P.	lb.	1.70	1.75
Thyme, red, U.S.P.	lb.	.85	1.25
White, U.S.P.	lb.	.85	1.45
Vetivert, Bourbon	lb.	4.35	16.50
Ylang Ylang, Bourbon	lb.	3.50	6.00

Aromatic Chemicals

Acetophenone, C. P.	lb.	$1.05	$1.45
Amyl Cinnamic Aldehyde	lb.	2.00	2.25
Anethol	lb.	1.00	1.05
Benzaldehyde, tech.	lb.	.60	.70
U. S. P.	lb.	.85	.95
Benzyl, Acetate	lb.	.44	.49
Alcohol	lb.	.63	.68
Citral	lb.	1.40	3.10
Citronellal	lb.	.75	.80
Citronellol	lb.	1.75	1.80
Citronellyl Acetate	lb.	4.50	7.00
Coumarin	lb.	2.75	4.65
Cymene, drums	gal.	.90	1.25
Diphenyl oxide	lb.	.50	.55
Eucalyptol, U.S.P.	lb.	.55	.57
Eugenol, U.S.P.	lb.	1.90	2.15
Geraniol, Domestic	lb.	.67	3.00
Imported	lb.	2.00	3.00
Geranyl Acetate	lb.	1.20	2.50
Heliotropin	lb.	1.80	2.20
Hydroxycitronellal	lb.	2.00	2.50
Indol, C. P.	oz.	2.00	2.13
Ionone	lb.	1.30	4.05
Iso-Eugenol	lb.	3.00	4.25
Linalool	lb.	2.10	6.30
Linalyl Acetate	lb.	1.35	2.25
Menthol	lb.	3.00	3.35
Methyl Acetophenone	lb.	2.50	3.00
Anthranilate	lb.	2.10	2.30
Paracresol	lb.	4.50	6.00
Salicylate, U.S.P.	lb.	.40	.45
Musk Ambrette	lb.	3.25	3.65
Ketone	lb.	3.40	3.80
Xylene	lb.	1.00	1.25
Phenylactaldehyde	lb.	2.25	3.50
Phenylacetic Acid, 1 lb. bot.	lb.	1.60	3.00
Phenylethyl Alcohol, 1 lb. bot.	lb.	2.70	4.25
Rhodinol	lb.	6.65	13.00
Safrol	lb.	.50	.52
Terpineol, C. P., 1000 lb. drs.	lb.	.23	—
Cans	lb.	.25	—
Terpinyl Acetate, 25 lb. cans	lb.	.77	1.00
Thymol, U.S.P.	lb.	1.40	1.45
Vanillin, U.S.P.	lb.	2.25	2.35
Yara Yara	lb.	1.25	1.50

Insecticide Materials

Insect Powder, bbls.	lb.	.27	.28
Concentrated Extract			
5 to 1	gal.	1.80	1.90
20 to 1	gal.	6.70	6.80
30 to 1	gal.	9.85	10.00
Derris, powder—4%	lb.	.28	.36
Derris, powder—5%	lb.	.34	.42
Cube, powder—4%	lb.	.21	.26
Cube, powder—5%	lb.	.25	.30

Gums

Arabic, Amb. Sts.	lb.	.09¼	.09½
White, powdered	lb.	.12	.12½
Karaya, powdered No. 1	lb.	.14½	.23
Tragacanth, Aleppo, No. 1	lb.	2.65	2.70
Flake	lb.	.50	1.00

Waxes

Bees, white	lb.	.37	.39
African, bgs.	lb.	.21	.22½
Refined, yel.	lb.	.33	.33½
Candelilla, bgs.	lb.	.14½	.15
Carnauba, No. 1	lb.	.41	.42½
No. 2, N. C.	lb.	.40	.41
No. 3, chalky	lb.	.33½	.35½
Ceresin, yellow	lb.	.08½	.11½
Paraffin ref. 125-130	lb.	.039	.040

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You can save money by investigating these Fatty Acids. INDUSOIL (refined tallol) and LIQRO (crude tallol) are being produced in large quantities as a by-product of our Kraft Paper Mills at Covington, Va. and Charleston, S. C. Because of this volume production, the cost of INDUSOIL and LIQRO is worthy of your consideration as it affords an opportunity to figure on products not subject to wide price fluctuations.

INDUSOIL

Excellent as a blend with red oil for textile soaps. Can be used with red oil for other applications including cutting oils, drawing compounds, soluble oils, pine scrubs, etc.
A blend of refined fatty acids with the following standard specifications as of May 16, 1938:

Acid Number	170-180
Saponification No.	170-185
Rosin Number	60-67
Moisture Less than	.1%
Ash Less than	.1%
Color Not More than	70 Yellow 40 Red Using Lovibond Colorimeter Half Column
Fatty Acids (Calculated)	55-60%
Rosin Acids (Calculated)	34-38%
Sterols (Calculated)	6-10%
Specific Gravity at 60° F.	.96 to .98
Viscosity (Saybolt Univ.) at 100° F.	300-400 sec.
at 210° F.	50-70 sec.
Flash Point	350-380° F.
Fire Point	410-430° F.

Other specifications special and must be indicated on order.

LIQRO

Indicated uses are for asphalt emulsions, cutting oils, low-priced soaps, and many other applications where a low-price fat is a requirement.
A blend of crude pine fatty acids with the following standard specifications as of July 1, 1938:

Physical Data	
Specific Gravity 60°F/60°F	0.96-0.98
Pour Point Not over	45°F.
Viscosity: Saybolt Universal—	
At 100°F—Seconds	800-900
At 210°F—Seconds	110-130
Flash Point	350-370°F.
Fire Point	410-430°F.
Color	Brown
Moisture	Less than 0.2%
Chemical Data	
Acid Number	150-160
Saponification Number	160-170
Rosin Acids Number	76- 82
Iodine No. (WIJS)	150-180
Ash	Less than 0.3%
Analysis	
Fatty Acids	45-55%
Rosin Acids (Calculated as abietic	40-45%
Sterols (Higher alcohols)	6-10%

Samples, Specific Data, and Additional Information can be secured by writing

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Production Section

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, *Oil & Fat Industries.*

Bleaching of Palm Oils

THE most used method of bleaching red palm oil in the soap industry is air bleaching. Palm oils vary greatly in their response to bleaching action, some bleaching very readily, some with great difficulty, and in some cases bleaching with air is practically impossible. Oil from the palm *Astrocaryum vulgaris* is an example of the latter. Of the commercially important palm oils, Congo oil is difficult to bleach, Zanzibar oil easy to bleach and palm oils from the west coast of Africa very easy to bleach. Good palm oils from the Dutch East Indies and the Malay States are readily bleached but take a longer time.

With oils from the same location and the same variety of palm, ease of bleaching decreases with an increase in fatty acid content. Bleaching is carried out with maximum ease with oils having a free fatty acid content of about 15 per cent. Palm oils having a free fatty acid content greater than 30 per cent are exceedingly difficult to bleach with air. With such oils, the much feared "overbleaching" may occur, which produces discolored soap. Sometimes fats which appear to be bleached to a light color give red-colored soap. The soap boiler attributes this to a return of the original color of the oil and blames it on insufficient bleaching. Actually this is not the case. Oxidized fatty acids are formed if bleaching is carried too far. The lipochromatic compounds of palm oil, particularly the red carotene, are completely destroyed by oxidation. The red color of soap made from over-oxidized palm oil is therefore not due to the presence of such compounds, but to the presence of newly formed, oxidized fatty acids. A further result of over-oxidation is an appreciable loss of fatty acids entering into soap formation.

The soap boiler is interested in conserving those fatty acids which go to form soap. Oxidized fatty acids will form soaps but these may be partially lost in the waste lye liquor, giving it a dark brown color. The rest of the oxidized fatty acids may be in the soap proper, also discoloring this. Soap of this kind cannot be improved by the use of bleaching agents as ordinarily applied by the soap boiler. Soap containing overbleached palm oil is unstable, becomes spotted, loses its perfume, and quickly turns rancid.

The question arises as to whether it is possible to judge correctly when palm oil is properly bleached. Knowledge of the composition of this oil, as well as that of other oils and fats, has been greatly increased in the last few years because of greatly improved analytical methods. It is now known that the red color of palm oil is due chiefly to the red carotene which it contains. This compound is a highly unsaturated hydrocarbon having the formula $C_{40}H_{56}$. The older view that yellow xanthophyll, a di-alcohol of the formula $C_{40}H_{54}(OH)_2$, was also present, has not been confirmed. The presence of a carmine red, a reddish orange, and another yellow lipochromatic compound, has recently been discovered. During oxidation by air, carotene and the other lipochromatic compounds are changed into an indefinable, dark pitch-like mass insoluble in fat, which precipitates from the bleached fat on standing.

A change may be observed during oxidation from the dark red color of the crude palm oil to a light red, then to an intense yellow, a dirty yellow, and finally a dirty greenish yellow. After filtration of the precipitated pitch-like oxidation products, a good grade of palm oil having a light greenish yellow color is obtained. A comparison of this with a good grade of crude coconut oil shows that the two are of practically the same color. The color changes mentioned in the bleaching of palm oil are not always easily followed with the eye, since the red color of the crude oil may appear to be unchanged for a long time, then suddenly the color may be yellow to brownish yellow. The color change is usually accompanied with the evolution of fumes which are irritating to the eyes. After this, there is no point in carrying the oxidation further, as the lightest color possible

has been reached. On further oxidation unsaturated glycerides or fatty acids are sure to be attacked, with the formation of oxidized fatty acids and a corresponding fat loss.

The actual amount of colored material originally present is very small. The total amount of unsaponifiable matter, including the colored constituents, varies from 0.2 per cent in Malaya palm oil, to 1.29 per cent in Drewin palm oil. Only a part is carotent. Lagos palm oil has been found to contain 0.067-0.110 per cent of carotene, 40 per cent of which was *alpha*-carotene, known as vitamin A. This part of the carotene is identical with that present in carrots.

Carotene possesses the property of a catalyst for oxidation reactions. Very small amounts,—less than 0.1 per cent of carotene,—have no catalytic action. It is probable that other factors such as the impurities present, biochemical processes, etc. have a greater influence on the various oxidation phenomena which occur in palm oil, than does carotene. A further factor of importance in oxidation processes is the composition of the fatty acids or the glycerides present. Hilditch and his school have used the newer methods of analysis for a study of the composition of various fats. As a result, the varying compositions of palm oil from different sources explain the differences in behavior during bleaching with air. E.g., palm oilshaving iodine numbers varying from 46.3 to 56.3 showed unsaponifiable constituents varying from 0.2 to 1.99 per cent.

The fatty acids present in palm oil were found to vary within the following limits:

	Per-cent
Myristic acid	1.2- 5.9
Palmitic acid	32.7-43.0
Stearic acid	2.2- 7.5
Oleic acid	40.2-51.2
Linoleic acid	6.5-11.2

Saturated fatty acids therefore vary from 42.7 to 48.6 per cent and unsaturated fatty acids from 51.4-57.3 per cent. The ratio of saturated fatty acids to unsaturated varies roughly from 1:1 to 0.8:1, a fact of importance in the bleaching of palm oil with air. The amounts of oleic and linoleic acids likewise vary; oleic acid from 78.2 to 91.3 per cent, and linoleic acid from 8.7 to 21.8 per cent of the unsaturated components. The ratio of oleic to linoleic acid therefore varies from 100:8.4 to 100:27.9. This shows how it is possible to have different behavior during oxidation, as linoleic acid has a much greater influence on oxidation than does oleic acid.

In addition to the percentage composition of the fatty acids of palm oil, the kind of glycerides present is of importance. Hilditch gives the following as the general composition:

	Per cent
Tripalmitin	10
Mono-oleo-di-saturated glycerides	30.60
Di-oleo-mono-saturated glycerides	0.60
Tri-unsaturated glycerides	0.30

A study of different palm oils showed great differences. The two examples following, illustrate this point. Congo palm oil is an example of an oil difficult to bleach, and Cape Palmas oil, one of an oil easily bleached:

	Congo %	*Cape Palmas* %
Tripalmitin	5.5	2.0
Steareo-dipalmitin	1.0	1.5
Oleo-dipalmitin	29.5	16.5
Palmito-diolein	58.0	66.0
Mixed glycerides of C_{18} fatty acids	6.0	14.0

The important question of the proportion of linoleic acid in the glycerides was not determined. It seems highly probable that palm oil with a higher content of linoleic acid undergoes overoxidation more readily than one with a lower content of linoleic acid.

At the present time the direct determination of linoleic acid is easily made with the aid of Kaufmann's thiocyanate number. It is also checked indirectly with the aid of the iodine number of the oil and the amount of saturated fatty acids present. Values which have been determined are as follows for palm oil from the Belgian Congo which is difficult to bleach, and for that from Drewin, which is easily bleached:

	Congo %	*Drewin* %
Iodine number of oil	53.5	56.3
Unsaturated fatty acids	51.4	57.8
Iodine number of fatty acids	104.0	97.3
Linoleic acid (% of unsaturated acids)	21.8	14.4

The difficultly bleached Congo palm oil contains about 50 per cent more linoleic acid than the readily bleached Drewin palm oil.

Palm oil with a high proportion of free fatty acids is also difficult to bleach with air. Such an oil appears to contain larger amounts of partially oxidized products which in themselves act as catalysts of oxidation. If such catalysts are present only in small amounts, they favor bleaching action and the decomposition of colored compounds. With neutral palm oils, bleaching begins only very slowly, but proceeds more rapidly as some of the "between" products are formed. There appears to be a definite relation between the amount of these catalytic agents and the amount of free fatty acids. The desirable oxidizing effect is at a maximum with a content of 15-16 per cent of free fatty acids. Above this not only the speed of oxidation changes, but the type of oxidation. Below this amount, only colored materials are attacked. With 15 to 30 per cent of free fatty acids, both coloring matter and unsaturated acids are attacked. Above 30 per cent, oxidation of unsaturated fatty acids proceeds faster than oxidation of coloring matter. The treated fat then becomes brown or reddish brown and is overbleached. F. Wittka. *Allegemeine Oel- und Fett-Atg.* **35,** 187-193 (1938).

Powdered Shampoos

Powdered alkaline shampoo compositions containing hygroscopic constituents are stabilized to storage by coating the particles of hygroscopic material with a water-repelling substance which, when the composition is dissolved in water, forms a soap by reaction with the alkaline constituent. Stearic acid is a suitable coating substance. Firma Hans Schwarzkopf. German Patent No. 658,246.

Flake Soap

SINCE most free alkali disappears during the drying of soap, a modern method of making flake soap from fatty acids is as follows: The fatty acids consist of 60 per cent of coconut oil fatty acids, 20 of peanut oil fatty acids and 20 of palm kernel oil fatty acids. The fatty acids from the peanut oil, palm kernel oil, and most of the coconut oil fatty acids are saponified by means of caustic soda. Care is taken to avoid any introduction of salt during saponification. If the soap is sufficiently liquid and has the necessary excess alkalinity, saponification proceeds much more rapidly without the addition of salt than with it. When all of the fatty acid is saponified enough water is added so that bubbles no longer form from boiling. This step is sometimes described as "rendering the soap colloidal."

The mass is again made more liquid by the addition of caustic soda solution, followed by the addition of a bleaching agent. The bleach is not expected so much to lighten the color of the soap as to render iron compounds soluble, so that they will be carried off later in the waste lye. After two hours, more coconut oil fatty acids are added but not enough to neutralize all of the alkali. The soap is then salted out for the first time, preferably with a salt liquor of 23-24° Be. If dry salt is used it should be moistened before it is added to the soap kettle.

The next day the spent lye is drawn off and the soap diluted with weak alkali until it boils readily. The remainder of the coconut oil fatty acids are added, followed by a marked excess of alkali. After some hours, more bleaching agent is added. This now has a chance to act on the soap, since interfering iron compounds have already been removed. At the end of the day, the soap is salted out with strong caustic soda solution.

On the third day the waste lye is drawn off after the soap has been boiled without the addition of water. If a large excess of free caustic is present in the soap, hot water is added. If the excess is not great, the soap is diluted with weak lye. It is allowed to stand well covered for two days, when the upper soap layer can be drawn off and treated further according to the final form desired. Hans Zilske. *Seifensieder-Ztg.* **65,** 315-6 (1938).

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Rubberized Soap

A rubberized soap of low moisture content consists of a predominant amount of soap and a small quantity of natural uncoagulated rubber from latex, uniformly distributed through the soap. Shell Development Co. Canadian Patent No. 374,248.

—— ♦ ——

Copper-Nickel Catalysts

The effect on the hydrogenation rate by addition of varying amounts of copper to nickel varied, depending on the presence or absence of a carrier and on the mode of preparation of the catalyst. In the first experiments, solutions containing both nickel formate and copper formate were mixed with kieselguhr, evaporated to dryness and homogenized. The dried material which contained 10 per cent of metal, was added to soybean oil in such amounts as to give a nickel concentration of 0.1 per cent. The formates were then decomposed in a carbon dioxide stream and then hydrogenation was carried out. Although an addition of 10 per cent of copper based on the nickel, accelerated the early stages of hydrogenation, the maximum activating effect was observed with an addition of 100 per cent copper. More copper up to 400 per cent had only a rather slight effect.

In series 2, if the kieselguhr was omitted and the catalyst prepared by decomposing in the oil an intimately ground mixture of nickel formate and copper formate, then the effect of the copper addition was to reduce activity of the nickel when 20-40 per cent of copper was used, while larger amounts had an activating effect. In this series, the addition of kieselguhr during the formate decomposition step changed the picture greatly. The copper had a mild activating action, with the maximum effect at 40 per cent copper addition.

When in series 3, the catalysts were prepared without carrier from mixtures of copper formate and nickel formate prepared by evaporating solutions containing both of them, small amounts of copper such as 5-10 per cent activated the nickel slightly, while larger amounts caused deactivation. H. P. Kaufman and H. Pardun. *Fette und Seifen* **44,** 223-8.

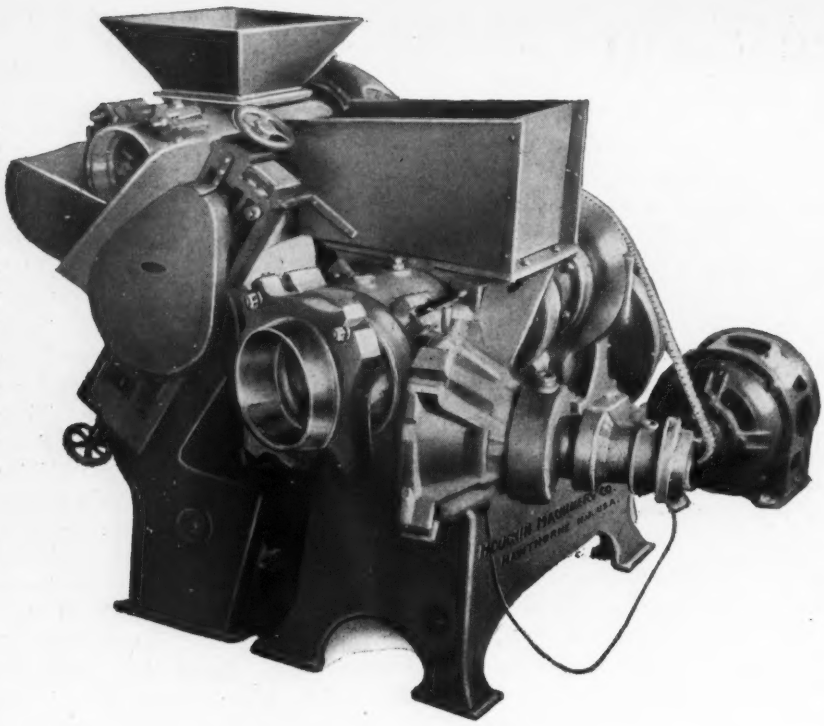
—— ♦ ——

Tall Oil Fatty Acids

The crude fatty acids from pulp manufacture (tall oil) differ to some extent in constitution according to their source. The following table shows the relation between tall oil from European sources and that from the pinewood of the southern United States.

The crude fatty acids are highly corrosive to a number of metals such as copper, nickel, aluminum and their alloys. Laboratory tests showed stainless steels with 18-8 chromium: nickel and approximately 3 per cent of molybdenum, to be satisfactory. Stainless steels with a minimum nickel content of 8 per cent and a minimum chromium content of 22 per cent are resistant to corrosion. Increasing the chromium content above that percentage increases corrosion resistance. *Chem. Trade J. & Chem. Engineer* **102,** 396 (1938).

	European Crude	*Southern U. S. Crude*	*European Distilled*	*Southern U. S. Distilled*
Acid number	114	120-130	150-183	150-170
Saponification number	129	120-130	150-185	150-170
Iodine value	—	—	107-140	100-118
Percent of fatty acids	—	17-25	45-55	43-50
Percent of resin acids	—	45-65	30-47	38-45
Percent unsaponifiable	—	20-30	8-30	13-18



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Products and Processes

Transparent Paste Soap

A smooth transparent paste soap containing 45 per cent of fatty acids may be made from the following:

	Kg.
Linseed or soybean oil.....	1000
Water	150
Caustic potash, 30° Be.....	760
Potash, in winter,...or.....	60-70
Calcined soda ash, in summer..	45-55

The potash or soda ash is dissolved in 120 kg. of water. Up to 10 per cent of the oil may be replaced with rosin. If direct heating is used, 150-250 kg. of water are added to allow for evaporation during boiling, the amount necessary corresponding to the time of heating. The yield with this formula should be about 2100 kg. of soap. R. Krings. *Seifensieder-Ztg.* **65,** 335-8 (1938).

Dry Cleaning Soap

Soap to be added to solvents for use in dry-cleaning machines may be made from 20 parts of soft soap plus 2 parts of olein. This is dissolved in 40 parts of water plus 10 of alcohol. To the solution are added 20 parts of tetrachloroethane or trichloroethylene. Another formula is based on 100 parts of olein plus 25 of butylcellosolve plus 25 of cleaners' naphtha. This is heated to about 60° C. Add to this with stirring 20.5 parts of triethanolamine, 8 parts of solid caustic potash and 13 parts of water. A. Davidsohn. *Les Matieres Grasses* **30,** 114-6 (1938).

New Saponification Method

Neutral fats or oils are saponified by being heated under pressure with an aqueous solution of an alkali metal carbonate, the pressure being regulated throughout the operation so that it remains equal to or does not rise above that of saturated steam at the temperature of operation, by allowing the carbon dioxide developed to escape. The supply of heat is preferably regulated also. An electrolyte such as sodium chloride is preferably added to the mass under treatment. Adolf Welter. British Patent No. 478,536.

Salt-water Soap

Soaps for sea water are made by saponifying fatty acids of molecular weight below 210 mixed with a certain proportion of fatty acids of high molecular weight, such as castor oil fatty acids. Louis A. Rouget and Jean D. Rouget. French Patent No. 48,182.

Anti-yellow Cold Soaps

Cold-process soaps, as well as semi-boiled soaps, have a tendency to yellow on the surface on standing. This yellowing is accelerated by subjecting the soap to heat and light, and is inhibited to some extent by excluding the air. A method of oil treatment described in U. S. Patent No. 2,078,726 by Carl H. Haurand produces an oil which can be used for making non-yellowing soap by the cold process. By subjecting a vegetable oil having a high saponification number and low iodine number to a slight degree of hydrogenation before saponification, the yellowing effect referred to is substantially inhibited. The degree of hydrogenation need not be sufficient to alter materially the physical characteristics of the oil, and should not be carried to such an extent as to cause brittleness or to reduce free lathering.

As an example, an oil such as coconut oil with an iodine number of about 9, is heated to 200-400° F. in the presence of a reduced nickel catalyst. The oil and catalyst are agitated with hydrogen gas under a pressure of about 60-70 pounds per square inch, until the iodine unmber has been reduced to about 8. The oil may also be deodorized by known processes. During treatment, the melting point and setting point of the oils are varied only slightly, e. g., the melting point may be altered from 75-76° F. to 77-78° F. and the setting point increased from an initial setting point of 22.5° C. to 23.1° C. If palm kernel oil is used, an initial iodine number of 17 may be reduced to about 15.

To produce a cold-process soap from the treated oil, 100 parts of the slightly hydrogenated oil are mixed with about 50 parts of 39° Be. caustic soda solution. It is preferred to heat the oil and the caustic soda solutions separately to about 120-130° F., after which the caustic soda solution is added to the oil while the latter is being thoroughly agitated. Stirring is continued until the mass becomes quite viscous and will just pour. It is then poured into frames, where it is kept for 1-2 days, during which time the soap becomes hard and saponification is substantially completed. *Soap, Perfumery & Cosmetics* **11,** 344-5 (1938).

Sodium Subsilicate

A solid sodium subsilicate is prepared by adding molten caustic soda to a silica-containing material having a molecular ratio of SiO_2 to Na_2O greater than 1:1. The Na_2O content of the mixture is not less than the SiO_2 content. It is stirred at a temperature below the melting point of the reaction product. The latter is produced in granular form and is technically anhydrous. The Pennsylvania Salt Manufacturing Co. Canadian Patent No. 373,243.

Soap Particles

Solid soap is mechanically subdivided into smaller pieces which are kept surrounded by an atmosphere of ozone. The newly exposed pores of the soap fill with ozone and are thus prevented from filling subsequently with air. Henry J. Nicholls. Canadian Patent No. 374,484.

Treated Soap Cakes

Bores or perforations in cakes of soap are filled with appropriate materials such as textile assistants, disinfectants or insecticides. G. Kereszty. French Patent No. 47,931.

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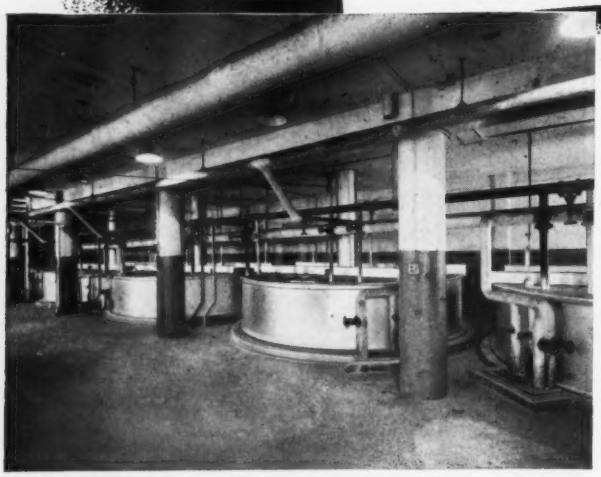

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Paul S. Menough, Chamber of Commerce Bldg., Pittsburgh, Pa.
The Adler Steel Products Co., 310 Thorpe Bldg., Minneapolis, Minn.

Detergent and Bleach

A soap powder having detergent and bleaching action may be made by mixing 10 per cent of pure powdered curd soap, 15 of trisodium phosphate, 10 of sodium perborate, 5 of Calgon, 30 of water and 30 of calcined soda ash. *Seifensieder-Ztg.* **65,** 398, (1938).

Solvents and Cleaners

Secondary alcohols are obtained from aliphatic carboxylic acids having about 5-11 carbon atoms in the molecule by converting them into ketones and reducing the latter. The alcohols are then sulfonated and are useful as cleansing agents and solvents. E.g., a fraction of oxidized train oils having 5-11 carbon atoms in the molecule is ketonized and then hydrogenated in the presence of cobalt. The resulting alcohols are treated with chlorosulfonic acid and neutralized. I. G. Farbenindustrie A.G. British Patent No. 477,499; through Chem. Abs.

Toilet Soap Cracking

A low salt content is very important in preventing cracks in toilet soap. Salt content can be controlled by its relation to the color of the soap mass during boiling. This color is dependent on three factors, (1) the color of the fatty material, (2) the salt content and (3) the alkalinity. Of these three factors, two are known. The color of the fat used is ordinarily white and the alkalinity can be determined by the usual methods. If white fat has been used and the alkalinity is normal, but the soap has a gray appearance, too much salt is present. In that case, boiling is continued for some time with a low pressure of steam, or hot water is added. At the end of half an hour the soap is examined as to color, and the process continued until the soap sets to a snow-white color. There is never too much salt present when the soap has the proper appearance. This empirical method has been followed up many times by analytical determinations and its reliability confirmed by the analytical results. These always showed that the soap giving the proper color test was practically salt-free. Heinz Zilske. *Allgemeine Oel- und Fett-Ztg.* **35,** 198-2-3 (1938).

Refining Glycerine

Weak spent lyes containing 4-5 per cent of glycerine are usually first treated with acid alum, then filtered to remove the reaction products, the filtrate being treated with caustic and again filtered to remove the precipitates and other impurities before concentration to half-crude glycerine. An addition of 0.1-02 per cent of a specially prepared diatomaceous earth, based on the weight of the will greatly speed up these two filtrations, especially when the reaction products are of a slimy nature. The diatomaceous earth can also be used to advantage in the later stages of purification where filtration is employed. *Indian Soap J.* **4,** 254-6 (1938).

Liquid Soaps

Liquid soaps are recommended for general use having a pH of 9.3-9.8. For shampoo liquids to be used on particularly delicate scalps, triethanolamine soaps may be made. In making these, the following figures are of use: 100 parts of coconut oil fatty acids require 64 parts of triethanolamine for saponification; 100 parts of castor oil fatty acids require 46 parts of triethanolamine; and 100 parts of olein fatty acids require 48 parts of triethanolamine. Suggested formulas for liquid soaps are as follows:

Ingredients	*Cheap shampoo*	*Castile liquid soap*	*Liquid hand soap*	*Carbolic soap*	*Borated soap*
Coconut oil	45	35	30	70	70
Castor oil	25	..	5	10	10
Olive oil	..	65	..	15	..
Palm oil	30	..	..	5	10
Cottonseed oil	..	..	65	..	10
Caustic soda, 38°Be	10	..	15	5	..
Caustic potash, 40°Be	40	50	35	45	50
Potassium carbonate	1.5	3	1	2	2
Sodium chloride	0.5	..	2	..	..
Glycerine	..	5	..	3	3
Alcohol	5	7	7	5	7
Sugar	..	..	5	1	..
Distilled water	250	150	300	200	200
Boric acid	..	0.5	..	..	5
Carbolic acid	..	..	..	5	..
Perfume	1.5	1.5	1.5	1.5	1.5

The perfume is added immediately after filtering and just prior to bottling. Krishnalal Wahi. *Indian Soap J.* **4,** 200-203 (1938).

Soap Lather Aid

The sodium salt of *normal*—(1-carboxycyclohexyl)-imino-diacetic acid and a little soda ash are added to water to prevent precipitation of calcium carbonate and to form a strongly lathering solution with soap. I. G. Farbenindustrie A.-G. French Patent No. 47,875.

Cleaning Block for Pans

A cleaning and polishing block to be used in the kitchen for scrubbing cooking pans is made of coarse aggregate pumice, fine natural pumice, magnesite and oxy-chloride cement or oxy-phosphate cement. John J. Kennedy. U. S. Patent No. 2,108,405.

Refining Fatty Oils

In a continuous process for refining oils or fats that contain free fatty acid, by adding alkali in successive fractions and finally centrifuging, each fraction is mixed with the oil and allowed to act with the fatty acid before the next addition and the mixture is progressively heated. Flocculants of the soap such as sodium chloride, acids, aluminates, calcium sulfate etc., may be added at any stage. The separated neutralized oil may be emulsified with steam and water and again centrifuged. The soap stock may be somewhat acidified, emulsified with water at 90° C., and allowed to stand to separate entrained oil. The soap stock may then be split to recover fatty acids. Aage Nyrop. British Patent No. 474,169.

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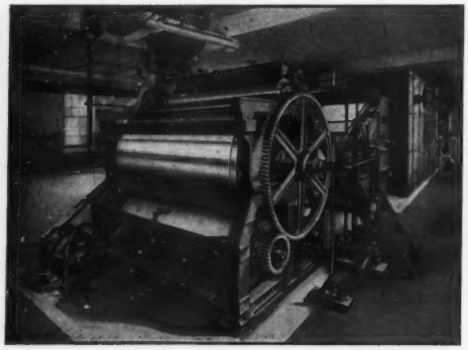

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No. 2,120,225, Nicotine Composition, Patented June 14, 1938, by Robert B. Arnold, Stonewall Courts, Va., assignor to Tobacco By-Products and Chemical Corporation, Louisville, Ky., a corporation of Delaware. A composition of matter in liquid form comprising anhydrous nicotine and water-free liquid petroleum hydrocarbon in solution in each other, the hydrocarbon having a boiling point not substantially less than 400° F. and not substantially greater than 800° F., the nicotine constituting not less than about seventy-five to eighty per cent of the nicotine and hydrocarbon mixture.

No. 2,120,807, Device for Soaping Flowing Water, Patented June 14, 1938, by William Kundel, Hoboken, N. J., assignor of one-half to Joseph Parisi, Jersey City, N. J. A device of the character described for liquids formed with a body having a compartment open at the top, a closure plate for closing the compartment, a rotatable soap supporting member carried by the closure plate, the closure plate having an aperture opening into the compartment arranged at an angle to the plane of rotation of the soap supporting member, the rotatable soap supporting member being formed with pockets in the lower face thereof presenting impelling buckets positioned so that liquid passing through the aperture in the closure plate will strike the walls thereof and rotate the soap supporting member, a tube carried by the body and extending through the closure plate and the soap supporting member, the tube being open at the top and bottom, means enclosing the tube and the soap supporting member presenting a container, a tubular swinging outlet member positioned with one end in registry with the bottom end of the tube, the body being formed with a hot liquid inlet passageway for the compartment and a cold liquid inlet passageway for the compartment, and a valve member for each of the passageways for controlling the flow of the liquid through the respective passageways.

No. 2,121,038, Insecticidal Compositions, Patented June 21, 1938, by Lindley E. Mills, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich. A composition of matter adapted to be incorporated in an aqueous emulsion suitable for application as insecticide to living plants, comprising a petroleum distillate having an unsulfonatable residue of at least 50 per cent by weight, and up to about 10 per cent by weight of 2,4-dinitro-phenol compound substituted in the benzene ring by a hydrocarbon radical containing at least two carbon atoms selected from the class consisting of the alkyl, aralkyl, and cyclo-alkyl radicals.

No. 2,121,039, Insecticidal Compositions, Patented June 21, 1938, by Lindley E. Mills, Midland, Mich., assignor to The Dow Chemical Co., Midland, Mich. An aqueous insecticidal emulsion suitable for application to living plants without causing injury thereto, comprising up to about 5 per cent of an oil having an unsulfonatable residue of at least 50 per cent by weight, and up to about 0.5 per cent of a dinitro-cresol.

No. 2,121,485, Soluble Heavy Metal Salts of Sulfonated Aliphatic Compounds, Patented June 21, 1938, by Walter H. McAllister and Robert A. Duncan, Wyoming, and Oscar T. Quimby, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio. As a new composition adapted for cleansing and wetting of materials, an aqueous solution of a water-soluble heavy metal salt of a compound of the group of sulfonated aliphatic compounds having at least eight carbon atoms in the alkyl radical consisting of a sulfonated aliphatic hydrocarbon, a sulfonated aliphatic alcohol, a fatty acid ester of isethionic acid, and a fatty acid amide of methyl taurine, the heavy metal being one whose normal sulfate is water soluble.

No. 2,121,748, Stable Lime Soap Grease, Patented June 21, 1938, by George A. Suit, Ponca City, Okla., assignor to Cities Service Oil Company, Bartlesville, Oklahoma. A grease comprising a semi-solid emulsion of heavy mineral oil, fatty acid-lime soap, 1-2% by weight of water, and 0.1%-0.2% phenyl-alphanaphthylamine as a stabilizing agent for the emulsion adapted to prevent separation of its constituents.

Reissue No. 20,772, Producing Soap of Definite Water Content, Patented June 28, 1938, by Benjamin Clayton, Houston, Tex., assignor to Refining, Inc., Reno, Nev. A continuous process of producing soap directly from a saponifiable material by the reaction therewith of an aqueous solution of a saponifying reagent, and recovering the glycerine produced by the process, which comprises: contacting the materials to produce soap and glycerine; continuously passing the mixture of soap and glycerine into an evaporating chamber; continuously removing water and glycerine vapor from the chamber at a rate sufficient to maintain a sufficient vacuum therein to vaporize substantially all the water and glycerine in the mixture; and continuously withdrawing soap from the chamber in such a manner as not to impair the vacuum maintained therein.

Sulfonic Acids

A mixture of the sodium salts of *alpha*-alkylindolesulfonic acids with alkyl radicals of an odd number of carbon atoms from 9 to 17 is prepared by treating the product obtained by subjecting palm kernel fatty acid-*ortho*-toluidide to a ring-closing process with a sulfonating agent under mild conditions until the product is soluble, neutralizing with sodium hydroxide, and separating with sodium chloride and ice-water. The product has good capillary activity and is useful as a dispersing, penetrating and washing agent. J. R. Geigy A.-G. Swiss Patent No. 192,-756.

Study Rice Oil

The oil content of rice in various stages of commercial preparation was examined. Rice oil is not suitable for edible purposes when used alone, but is serviceable for soap manufacture, especially if mixed with other oils such as coconut oil. Roger F. Auriol. *Bull. mat. grasses inst. colonial Marseille* **21,** 112-16; through Chem. Abs.

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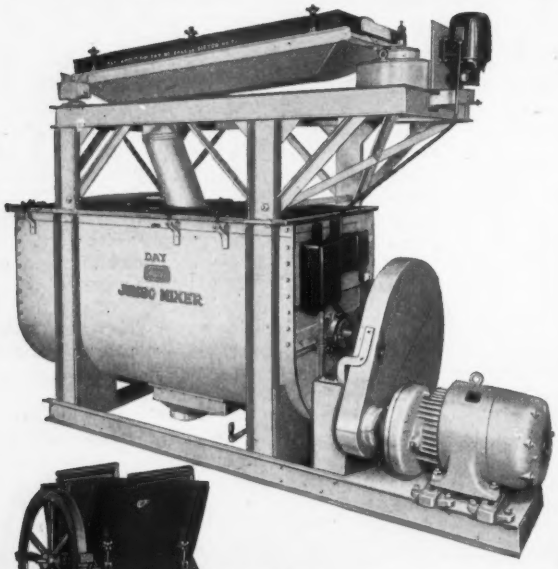

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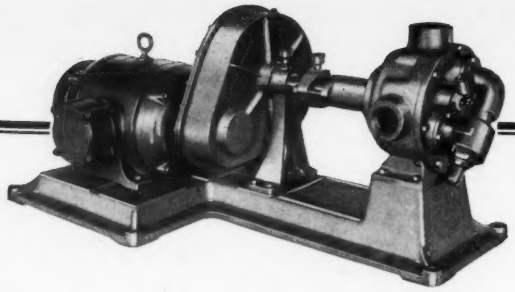

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Fat Splitting

Fat splitting with water is effected in a high-pressure zone,—glycerine, water and most of the fatty acids are evaporated in a medium-pressure zone, and the residual acid is evaporated in a low-pressure zone. Erich Hoffman. British Patent No. 477,197.

Fatty Acid Process

Fatty acids of animal or vegetable fats or oils are obtained by re-esterifying the glycerides with non-distillable artificial resin acids or with the acid residues from the distillation of colophony or artificial resin acids, and distilling off the liberated fatty acids. Kurt Albert G.m.b.H. chemische Fabriken. French Patent No. 820,492.

Fat from Sulfite Liquors

Desperate attempts to find new sources of fats or means of producing them are being made in Germany, as shown in the following abstract: World War experiments in Berlin resulted in the preparation of small amounts of fats from carbohydrates with the aid of certain micro-organisms. More recent experiments resulted in obtaining small amounts of fat from pure molasses solution as substrate. Good spent sulfite liquors, filled with assimilable nitrogen, yielded 18 per cent or more of fat with the proper inoculation. Sugar in a whey solution containing inorganic salts yielded 12-14 per cent of raw fat. The processes have not yet reached the stage of development which makes them economically useful. H. Fink, H. Haehn and W. Hoerburger. *Chem.-Ztg.* **61,** 689-93, 723-6, 744-7.

Conjugated Hydrogenation

A conjugated hydrogenation of sunflower oil with hexyl alcohol was brought about by hydrogenating a solution of 44 grams of hexyl alcohol in 150 grams of sunflower oil, in the presence of catalysts at 260° C. for 15 minutes. The original sunflower oil contained oleic acid 29.2 per cent, linoleic acid 62.9 and saturated acids 7.9 per cent. The hydrogenated product had an iodine number of 84.1 and contained oleic acid 62.5 per cent, isoöleic acid 16.0, linoleic acid 9.9 and saturated acids 11.6 per cent. G. A. Ivanova. *J. Applied Chem. (U.S.S.R.)* **11,** 61-4 (1938); through Chem. Abs.

Recovery of Nickel Formate

Nickel formate in filtrate and wash waters is recovered by transferring the solution to a tank and cooling rapidly, with stirring by an air current, to 12-14° C. In this way 45-60 per cent of fine crystalline sodium sulfate decahydrate is precipitated. The filtrate is evaporated to about 60 per cent volume and the precipitated catalyst is used directly in the hydrogenation of oils, or is treated with a calculated amount of nickel sulfate in water and, after concentration and addition of sodium formate, is allowed to crystallize. The activity of the catalyst is equal to that of the original product. By this procedure an economy of 34 per cent of sodium formate, 10 per cent of soda ash, and 12 of sulfuric acid was effected. M. V. Dmitrievskaya and B. N. Sleptsov. *Masloboino Zhirovoe Delo* **13,** No. 6, 14-15; through Chem. Abs.

Cottonseed Oil Test

Crude and refined cottonseed oil can be differentiated microscopically by reaction with a saturated solution of potassium hydroxide in normal butyl alcohol. The refined oil gives a characteristic crystalline soap, the crude oil an amorphous soap. Methyl alcohol and ethyl alcohol were not as good solvents. L. Wilson Greene. *Cotton and Cotton Oil Press* **39,** No. 14, 3-4 (1938); through Chem. Abs.

Oil Decolorizing Agents

Decolorizing agents for oils are made by mixing finely divided charcoal with a silicic gel before or after activation of the latter by dehydration. Petroleum soot, previously heated to redness, may be used. Helene A. A. Hofmann. French Patent No. 822,338.

Purification of Oils

Vegetable and animal fats and oils can be purified by first heating *in vacuo* with a 5 per cent excess of a concentrated solution of caustic soda over the amount necessary to neutralize free fatty acids. After drying and filtering, the oil is heated with a dilute solution of caustic, which removes impurities and coloring matter. Caustic is washed out with cold water. The second stage of washing with dilute alkali is repeated if necessary. *Les Matieres Grasses* **30,** 63-4 (1938).

Recovery of Animal Oils

To prevent the darkening and coloring of oil during extraction from flesh, such oil-containing materials are treated in a filter drum which rotates within a stationary digester. The contents of the filter drum are kept at all times below the surface of the liquid from which the oil is separated. Eilif F. Heyerdahl. Norwegian Patent No. 57,582.

Nickel Catalyst

An active, finely divided nickel catalyst for hydrogenation of oils is produced by incorporating a nickel salt of a carboxylic acid with a liquid hydrocarbon which is substantially volatile at the temperature of operation, and heating the mixture under a superatmospheric pressure at a temperature at which thermal decomposition of the nickel compound to catalytic nickel occurs. Shell Development Co. Canadian Patent No. 373,994.

Lanopalmic Acid

Lanopalmic acid, $C_{16}H_{32}O_3$, melts at 86-7° C., its methyl ester at 45-6° C. The latter was isolated from wool wax which was separated from the scouring liquor of merino sheep wool. The mixed acids contained a nonacidic resinous substance soluble in dilute alcohol and showed saponification number 168.2 and neutralization number 141.6. The content of lanopalmic acid in the mixed acids is about 7 per cent. Tsutomu Kuwata. *J. Am. Chem. Soc.* **60,** 559-60 (1938).

pH—Meaning and Use

(*From Page 24*)

electrodes have been used, including a silver-silver chloride electrode dipping into a chloride buffer solution in contact with the inner surface of the glass membrane; a special calomel electrode with *N* hydrochloric acid filling the glass membrane; a lead-lead chloride electrode with 0.2 *N* hydrochloric acid; a bright platinum electrode dipping into a 2 per cent solution of platinic chloride in contact with the glass membrane a bright platinum electrode in a solution of 0.1 *N* hydrochloric acid saturated with quinhydrone; and a bright platinum electrode in a buffer solution of pH 4 saturated with quinhydrone. When the inner reference electrodes are metallic electrodes, they may be obtained filled, sealed and ready for use. The separate tube with the glass membrane on the tip is then partially filled with the solution specified and the electrode dipped into this. When quinhydrone or platinic chloride solution is used, a simple bright platinum electrode is inserted. The glass electrode is used in conjunction with a saturated calomel half-cell or with a quinhydrone half-cell.

Many workers make their own outer glass electrodes and blow these in the form of thin glass bulbs. These are somewhat fragile and can be protected with an ingenious but simple glass sheath[8] which will not be described here. Some of the glass electrodes on the market are relatively thick and require no more care in handling than ordinary glass equipment. Their high resistance is provided for by a suitable means of amplification in the electric circuit.

There are instruments now on the market that can be used with glass, quinhydrone, or hydrogen electrodes. These make use of vacuum tubes such as are a part of standard radio equipment, which permits the use of a glass electrode in the system. The price for such all-purpose pH equipment varies from about $135 to $250.

[8]John H. Highberger and Frederick D. Thayer, *J. Am. Leather Chem. Assoc.* 30, 339-41 (1935).

[9]. Powney and D. O. Jordan, *J. Soc. Chem. Ind.* 56 133-7T (1937).

Powney and Jordan[9] used the glass electrode successfully in alkaline detergent solutions but found that when the glass membranes were used at a high degree of alkalinity, particularly at elevated temperatures, after a time they failed to give reproducible readings and had to be rejected. They made measurements up to and above pH 12, applying suitable corrections.

(Colorimetric Methods for pH determination will be discussed in the next issue.)

—— ♦ ——

Detergents for Milkstone

Milkstone is primarily a mixture of milk minerals, milk proteins and some adhering fat. Its composition varies, depending on the product which comes in contact with the heating surface. When equipment is washed with hard water and remnants are allowed to remain, there is a tendency for a deposit of the minerals from the water to form on the surface of the equipment. The type of detergent used in the wash water may also be a factor in milkstone formation. Some washing powders, particularly carbonates, precipitate the minerals in the form of hard granular particles which settle out on the equipment in the form of a film. Other washing powders such as trisodium phosphate and sodium metasilicate precipitate the water hardness in a fine flocculent form which does not settle out so readily and is therefore less likely to form a film on the equipment.

In order to prevent milkstone, the temperature of the heating medium should be kept as close as possible to the temperature of the milk. In removing milkstone, the equipment should first be soaked in a weak alkali solution. This will dissolve or loosen the protein. Then the equipment is soaked for several hours with a 0.1 per cent tartaric acid solution to dissolve phosphates. Hydrochloric acid solutions have been used for this purpose, but they are more corrosive than a solution of organic acid. H. A. Ruehe. *Milk Plant Monthly* **27**, No. 4, 31-1 (1938).

Textile Assistant

Products having cleansing and bleaching properties are obtained by the sulfonation of esters that contain one or more monoesterified radicals of a boron or phosphorous-containing acid and that are derived from a polyhydric alcohol and a higher alcohol or fatty acid having more than six carbon atoms. N. V. Chemische Fabriek "Servo" and Meindert D. Rozenbroek. British Patent No. 474,-229.

—— ♦ ——

Soap Analysis

To analyze soap for fatty acids and for alkalinity, 5 grams of sodium chloride and 20 cc. of a saturated aqueous solution of sodium chloride are added to 50 cc. of soap solution and the precipitate is collected and washed with aqueous sodium chloride solution. The filtrate plus washings are diluted, 30 cc. of 0.1 *N* sulfuric acid are added, the solution is titrated to a methyl orange endpoint with 0.1 *N* sodium hydroxide solution and free alkali is calculated. A second 50 cc. of solution is shaken with 10 grams of sodium chloride, 35 cc. of 0.1 *N* sulfuric acid, and 25 cc. of light petroleum. The upper layer is washed with aqueous sodium chloride solution and titrated with 0.1 *N* sodium hydroxide solution (*A* cc.), to a phenolphthalein endpoint. The aqueous layer plus washings are titrated to a methyl orange endpoint (*B* cc.). Total fatty acids in grams per liter are given by 0.564 *A*, and free fatty acids by $A - 0.564\ (35 - B - C)$, where *C* is the volume of sulfuric acid used to neutralize free alkali. M. Shpak. *Org. Chem. Ind.* (U. S. S. R.) **3**, 365; through Chem. Abs.

—— ♦ ——

Quaternary Ammonium Comp'ds

A tertiary amine is caused to react with an ester derived from an aliphatic alcohol or mercaptan containing at least 6 carbon atoms in the molecule, and an acid containing a halogen atom in the *alpha*-position. Such products are useful in the manufacture of shaving creams, dentifrices and hairwashes. Henkel & Cie, G.m. b.H. German Patent No. 657,055; through Chem. Abs.

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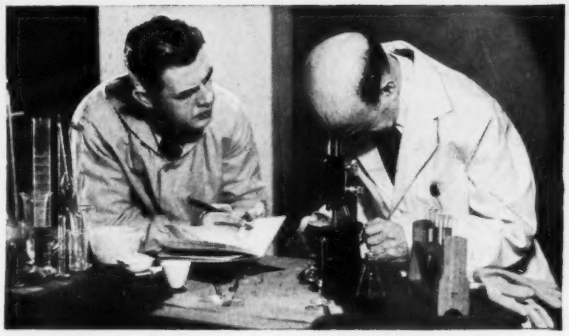

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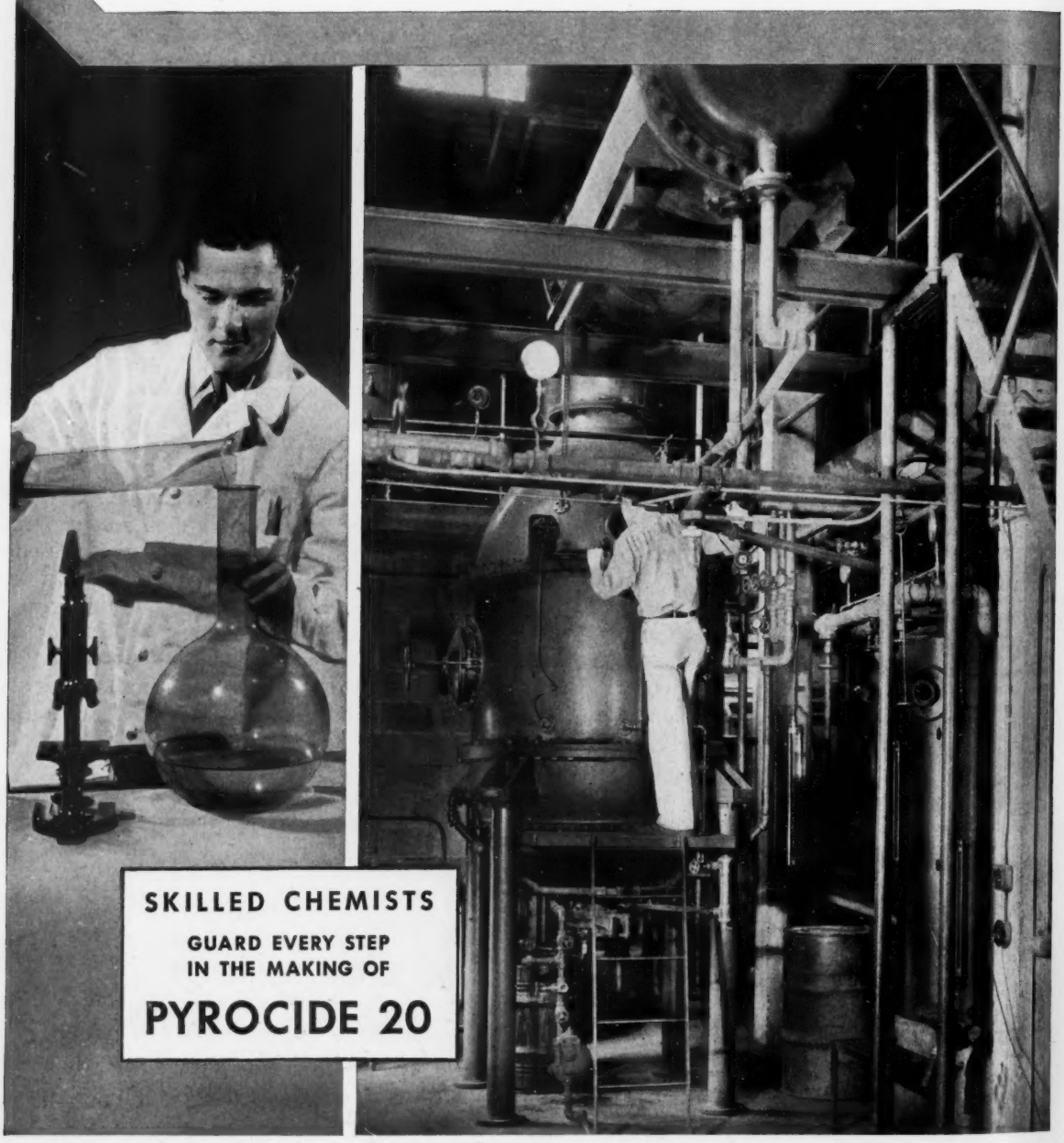

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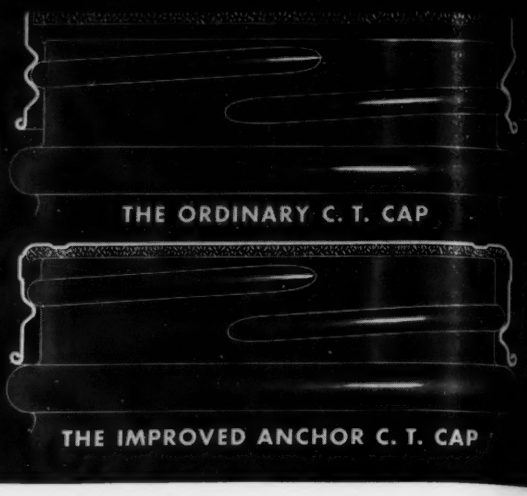

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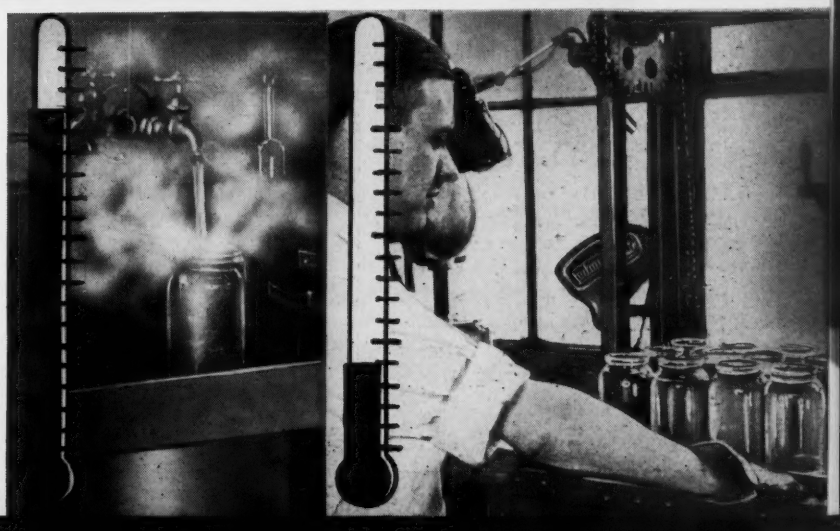

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Sanitary Products

A Section of SOAP
Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

CONSIDERABLE apprehension exists among manufacturers of disinfectants, germicides, animal dips, and allied products regarding the eventual effect of the new Food, Drug and Cosmetic Law on their products. Will it conflict with the Insecticide Act of 1910,—and where will they fit into the picture? First of all, the new law does not go into effect for almost a year. During that time, enforcement regulations will undoubtedly be drawn up and the situation clarified so that conflict will be avoided. Frankly, we cannot see any reason for undue excitement among manufacturers at this time. Between now and next June when the new law becomes operative, those who keep in touch with the situation through the trade press, will have ample opportunity to adjust their difficulties as and when new regulations are issued.

FROM a well-known entomolgist comes a brief report regarding the wide variation in quality of insect powder on the market. Not so long ago, a number of brands of powdered pyrethrum were tested against roaches and found to vary all the way from an excellent insecticide to an almost worthless product. In each case, the product was labeled as pure pyrethrum powder,—and the natural conclusion of those who might happen to use the poor grade powders, is that pyrethrum has little value in killing roaches.

This entomologist as a result of his findings urges some kind of standardization of insect powder quality, not only as a means of protecting the public, but to protect the good name of pyrethrum as well. That his point is well taken and completely logical is admitted without reservation, but this problem of standardization of pyrethrum powders right down to the time they are used, is far more complicated than might appear at first glance. But, nevertheless, it is true that if something is not done in the direction of standardization, the chances of insect powder losing caste as an insecticide are great.

REPORTS of sharp practice among sanitary supply salesmen seem to be more numerous than in other fields. Or possibly, it just happens that more of these reports come to our attention. At any rate, after discussing this matter with both manufacturers and buyers, we conclude that the sanitary supply trade is going to have to exercise more care in the selection of its sales representatives, to train them better particularly in regard to the products they sell, and also do something about commission rates and methods of payment, if the trade is not going to continue to have the periodic headaches brought on by activities of some salesmen. The trade appears constantly to put off thrashing out this problem as a group. But if the industry as a whole is ever really going to put its house in order, this is one of the first problems which will have to be solved. The first step in its solution of course is to get a higher degree of cooperation among the various employers in the field. The house that has been "stung" by a salesman ordinarily keeps rather quiet about its bad luck,—with the inevitable result that the next employer, unwarned, has the same bad experience. A little more frankness and confidence among employers would do much to remedy this situation.

Test Methods on Roaches

German cockroach as a test insect for liquid petroleum insecticides . . . a report on Ohio State fellowship investigations.

By E. N. Woodbury*
Ohio State University

DURING recent years cooperating laboratories of the National Association of Insecticide and Disinfectant Manufacturers have practically perfected the Peet-Grady method for the evaluation of liquid household insecticides against houseflies. As no comparable investigations have been made against crawling insect pests, such as cockroaches and bedbugs, it has been necessary to assume that satisfactory fly sprays are effective against crawling insects and that the relative effectiveness of insecticides containing different components is the same to crawling insects as it is to houseflies. The possibility that these assumptions might be incorrect led to the present investigation.

It was considered desirable to find out first whether any crawling insect pest of the household would lend itself to a test comparable in purpose and precision to that of Peet and Grady. The first requirement of such a method is large numbers of insects reared under controlled conditions and used for testing at a known, uniform age. Because its life cycle is shorter than that of any other species of common cockroach and because it is more prolific, the German cockroach, *Blattella germanica* L., was selected for the investigation. At the same time bedbugs were collected and reared by feeding them on rabbits. Artificial feeding of bedbugs through membranes was attempted, but the successful rearing of large numbers in this way has not yet been accomplished. Therefore the present paper is confined to a description of experiment with the German cockroach; rearing, method of testing, and results of tests.

Fig. 1. Stock cage for cockroaches.

Rearing

In order to obtain a continuous supply of cockroaches of known age, two types of cages were constructed: a single large stock cage for development of collections and for general maintenance, and a large number of small cages in each of which insects from a single egg capsule were reared until ready for use.

Stock cage. This cage (Fig. 1) was made 4 feet square with sides of 5½ x ¾ inch redwood rigidly nailed to the bottom which consisted of a sheet of Masonite impregnated with paraffin. The top of the cage was left open except for 3-inch strips of celluloid which formed a horizontal flange on the top of each side overhanging the interior of the cage. These strips were reinforced by iron wire which was bent down over the sides of the cage at each end and fastened in place with staples. The inner sides of the cage were lined with stripes of celluloid, 5½ inches wide, which were held in place by thumbtacks and celluloid cement.

*Paper presented before 24th annual summer meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., Lake Wawasee, Ind., June 13. This paper presents the results of investigations made durnig the first year of a Fellowship established by the Association with the Research Foundation of the Ohio State University for the purpose of getting information on the relative effects and value of household insecticides against crawling insects. The project was under the immediate supervision of Dr. F. L. Campbell, acting in consultation with the Insecticide Scientific Committee of the Association. The writer wishes to make grateful acknowledgement of the help freely given not only by the Committee but by others who were not directly concerned. Special mention should be made of advice obtained from Harold Waters on design and construction of equipment and of helpful assistance given during the academic year by an N. Y. A. Student, C. S. Barnhart.

Fig. 2. Rearing cage for cockroaches.

Cracks were sealed with a mixture of modeling clay and vaseline. All surfaces of celluloid facing the interior of the cage were coated with a thin film of vaseline. As the roaches cannot climb a greased surface, their escape from the cage was effectively prevented, and because the top of the cage was open, they were readily accessible.

Pieces of pleated waxed paper placed in piles on the bottom of the cage served as hiding places for adults and large nymphs, while strips of corrugated cardboard were employed as shelters for small nymphs. An automatic water supply was provided by inverting a jar of water in a dish. Food was placed in Petri dishes located near the shelters. The only care of the cage required, other than cleaning and renewal of food and water, was an occasional greasing of the celluloid with vaseline.

Rearing cages. Because more than 1000 small cages were needed to rear roaches hatching from single egg capsules, their construction and operation were made as simple and inexpensive as possible. A photograph of one of these cages with lid off is shown in Figure 2. They were made from cardboard Sealrite liquid containers of pint capacity. These small cylindrical containers were dipped in melted paraffin to render them still more resistant to moisture. A hole about 15 mm. in diameter was cut with a cork borer in the side of each cage close to the bottom and closed with a No. 2 cork stopper. Through this hole food was placed on the bottom of the cage and adult female roaches were introduced or withdrawn. A transparent top was provided for each cage by replacing the cardboard disc in the rim by a perforated disc of celluloid which was cemented in place by means of a little acetone. An automatic water supply was provided for each cage in the following manner. A 9 mm. piece of glass tubing, 1½ inches long, was filled with cellucotton and about ¼ inch of its length inserted into the cage through a hole cut in the center of the bottom. The lower end of the tube outside the cage was immersed in water contained in a galvanized iron trough upon which the cage rested. Each trough was 4 feet long, 2½ inches wide and 1 inch deep and accommodated 13 cages. Each trough was dipped in a hot mixture of paraffin and vaseline to prevent corrosion. Nine or ten troughs were carried on a tray 4 feet long and 3 feet 2½ inches wide made of 1 x ⅞ inch redwood. These trays bearing the troughs and cages were shelved one above the other in two ranks of 5 trays each under the table bearing the stock cage. Each tray was supported on two sides by a strip of wood nailed to the culture table. These strips were greased with vaseline so that an entire tray, with its cages could be pulled out like a drawer for examination. The troughs in a tray were separated from each other by thin strips of wood nailed to the tray. Guided by these strips, any individual trough could also be pulled out for examination of its cages. The entire set-up for storage and watering of cages is shown in Figure 3 with one tray and one trough partly pulled out. By this compact arrangement 1235 cages can be maintained in a space of 85 cu. ft.

Food. The following mixture,

Fig. 3. System of trays and metal troughs which serve as storage place and semi-automatic watering system for cockroach rearing cages.

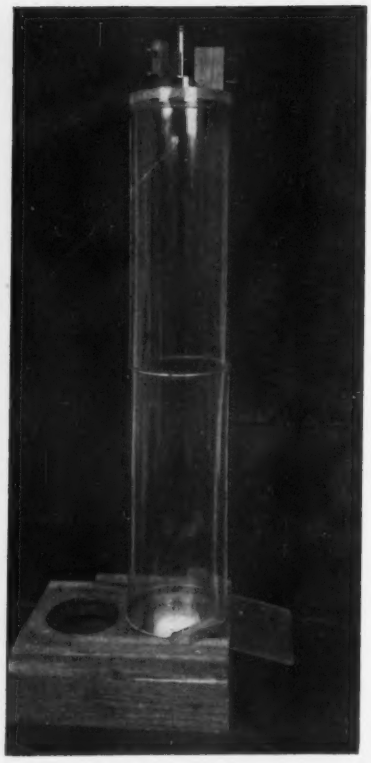

Fig. 4. Spray cylinder, top, and base.

recommended by McCay and Melampy,[1] was used successfully:

	Parts by Weight
Ground whole wheat	50
Dried skim milk powder	45
Bakers' yeast	5

Before use it was moistened with water until it formed a crumbly mass and was then allowed to dry.

Rearing procedure. The female German cockroach normally carries her egg capsule up to and during the emergence of the nymphs. Egg capsules that are dropped by the female usually do not hatch. For this reason a female bearing a well developed egg capsule was placed in each rearing cage. Such females were trapped in the stock cage by placing in one corner of this cage a glass crystallizing dish baited with a piece of graham cracker and with inner walls vaselined. When the insects in the stock cage were stirred up, many would climb into the crystallizing dish, from which they could not escape. When a sufficient number of insects were trapped, the dish was removed and placed in a refrigerator at 32°F. for 15 minutes. Females with egg capsules could then be easily sorted out and placed individually in rearing cages. At the same time a little food was placed loose on the bottom of the cages.

Rearing cages were examined daily and those containing newly hatched nymphs were dated and the females returned to the stock cage. An average of 30 nymphs hatch from a single egg capsule and with little further attention will become adults in 60 to 70 days at a room temperature of about 80°F. The insects were reared and used for testing in a basement room in which temperature was controlled, ranging, except during the summer, from 76° to 83°F.

Used cages were washed with mild soap and warm water and fresh cellucotton wicks were placed in the watering tubes before they were restocked with females.

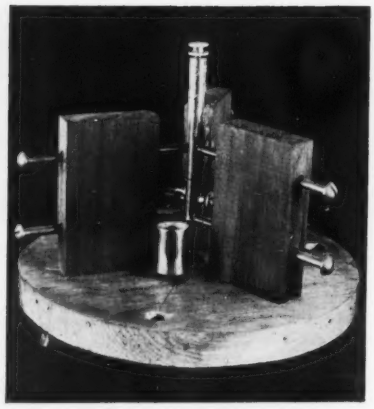

Fig. 5. Top of spray cylinder showing method of mounting air brush.

Testing Equipment

For making spray tests the following items of equipment were used (see Figures 4 and 5):

1. A DeVilbiss Numograph artists' air brush, type AEN-601, with detachable metal cup of 5 cc. capacity. The needle valve was so adjusted that 1 cc. of Deo-Base was finely atomized in 19 seconds. In order to be certain that the performance of the air brush remained the same from day to day, it was calibrated before each series of tests by drawing the oil from a 1 cc. pipette attached horizontally by a short piece of rubber tubing to the inlet of the air brush. The time necessary to atomize 1 cc. of Deo-Base was then determined by stop watch. If necessary, the needle valve was adjusted to bring the time of delivery to 10 seconds. All spraying was done within a Peet-Grady chamber with a pressure of 20 lbs. per sq. inch during spraying.

2. A celluloid spray tower 40 inches high and 8 inches in diameter reinforced with heavy iron wire. Leaks between the cylinder and its removable top and base were prevented by felt weatherstripping attached to the periphery of the ends of the cylinder.

3. A circular wooden top for the spray tower on which the air brush was mounted by means of 6 stove bolts as shown in Figure. 5.

4. A wooden base for the spray tower, 16 inches long, 11 inches wide, and 5 inches high. Two parallel strips of wood served as guides by which the spray tower was centered over a recess 1⅜ inches deep and 5 inches square in one end of the base. At the other end was a hole, 6 inches in diameter, over which the cylinder was pulled at the end of the exposure period.

5. A celluloid slide, 14 x 8 inches.

6. Open cages (Fig. 6) in which the roaches were treated. These consisted of vaselined rings of celluloid, 1¼ inches high, reinforced by 4-inch embroidery hoops. Each ring

Fig. 6. Cage for confining cockroaches during spraying.

[1]McCay, C. M., and R. M. Melampy. Care and rearing of *Blattella germanica In* Culture methods for invertebrate animals. Comstock Publishing Co., New York, 1937.

was placed on a disc of filter paper on a glass plate and was held in place by two metal clips.

7. Observation cages for sprayed roaches. For this purpose the regular rearing cages were used. The bottoms of the cages were covered by a piece of filter paper to prevent the sprayed roaches from sticking to the paraffined surface. Since it was found that roaches that had had a steady diet of their regular food were very fond of graham crackers, a piece of cracker was used as food in order to avoid cannibalism, which otherwise frequently occurred, particularly in the case of nymphs.

Method of Testing

In all tests in which two or more insecticides were compared, second instar nymphs were used two days after molting. At this early stage it is easier to secure adequate numbers of uniform individuals than it is later, when differences in rate of development and sex difference in susceptibility appear. Moreover, rearing cages are not tied up so long when young nymphs are used.

The procedure followed in making a spray test with the young nymphs was as follows: The outer surface of a small glass dish was thinly coated with vaseline and the dish was placed in the center of an 8-inch crystallizing dish, the sides of which had been vaselined on the inner surface. The contents of all rearing cages which contained roaches ready for use on that particular day were then emptied into the smaller dish. The young roaches would run out of the smaller dish into the larger and thus be separated from unused food and other debris that had accumulated in the rearing cages. Because it was greased on the outer surface, no insects were able to crawl back into the smaller dish and when all the insects had left, it was removed. Successive lots of 30 to 40 roaches were then collected from the crystallizing dish by means of an aspirator and were placed in the celluloid ring testing cages. After the delivery of the air brush had been checked, a test cage was placed in the recess of the spray tower base, covered by the celluloid slide, and the spray tower placed on the slide directly above the cage. Four cc. of insecticide was pipetted into the cup of the air brush and the cylinder was filled with mist by spraying for a period of 30 seconds. Aften an interval of 20 seconds necessary to allow air currents to subside within the cylinder, the slide was pulled and the insects exposed to the settling mist for the desired length of time. The sprayed roaches were then counted and placed in observation cages. Mortality counts were made at the end of 24 hours. For reasons explained below it was found necessary to classify as dead both insects that showed no movement and those that, though living, were incapable of locomotion. In order to make classification of dead or alive as objective as possible, the sprayed insects were dumped in a pile in the center of an 8-inch crystallizing dish; individuals that were able to crawl over the bottom of the dish to the wall were considered alive and those that could not were called dead.

When adult roaches were used for tests, essentially the same procedure was followed, except that they were chilled in order to separate them into test lots. In order to obtain an appreciable kill, it was necessary to spray the adults directly or to increase the period of exposure to the settling mist.

Results of Tests

Preliminary tests. Many tests were made to work out the procedure described in the preceding section. It seems sufficient to outline the results of these tests without publishing tabular data which were given in monthly reports.

First, studies were made of variation in mortality of nymphs 12 days old in successive tests with the Official Control Insecticide (1937). According to the chi-square test, variation among tests made on one day on samples from one batch was no greater than that to be expected from random sampling, but variation from day to day was greater. Further tests indicated that day to day variation might be reduced by careful selection of nymphs two days after their first molt instead of 12 days after hatching.

The next tests were made to find out whether differences in effectiveness could be determined among sprays of different pyrethrin content. As unsatisfactory results were obtained in a comparison of the O. C. I. (1937) and a supposedly good commercial fly spray, further tests were made with certain dilutions of a concentrate of known pyrethrin content kindly provided by the Insecticide Division, Bureau of Entomology and Plant Quarantine. The difference in actual kill produced by the two solutions in 24 hours was not significant. The same was true of the results of another series of tests in which comparison was made of solutions containing 25, 100, and 400 mg. pyrethrins per 100cc. respectively. These unexpected results show at once that the German cockroach does not react to pyrethrum sprays in the same manner as the housefly. Whereas in the housefly death or recovery from pyrethrins is sharply distinguishable in 24 hours or less, in the cockroach many individuals may be moribund at the end of 24 hours. After further study of young nymphs sprayed with pyrethrum extracts it was found that percentage of dead plus moribund in 24 hours is proportional to pyrethrin content and is a measure of effectiveness of pyrethrum sprays, because roaches paralyzed after 24 hours may be expected to die of starvation or lack of water. For this reason the criterion of death described in the preceding section was adopted.

Relative toxicity of various insecticides. Having worked out a satisfactory method of testing, it seemed desirable first to apply it to determine the relative toxicity of the more important components of fly sprays. Three concentrations each of pure rotenone, pyrethrins, and normal butyl carbitol thiocyanate were compared. Deo-Base alone was the sol-

vent for the last two, whereas rotenone was dissolved in a mixture of anisole (methyl phenyl ether) 15 per cent and Deo-Base 85 per cent by volume. Anisole, which was used to hold rotenone in solution in Deo-Base, may have contributed somewhat to the toxicity of this spray.

It was originally intended to include alpha napthyl isothiocyanate in this comparison but preliminary tests showed that it was relatively ineffective when used alone in Deo-Base. A concentration of 10,000 mg. per 100 cc. (approaching saturation) exhibited very little knockdown and gave a kill of only 50 per cent under conditions such that the O. T. I. (1938) gave a kill of approximately 70 per cent.

Tests were run in random order, a series of tests for one day consisting of one test of each of the concentrations of every insecticide. Because no additional mortality of roaches classified as alive took place after 24 hours following treatment with rotenone, mortality counts were made at the end of 24 hours in all cases.

Results of the tests are given in Table 1. The high degree of variability in the level of kill from day to day is probably due to the fact that it was not always possible to use insects of exactly the same age after the first molt. On the basis of concentration required to kill a given percentage, the mean mortalities show rotenone and the pyrethrins to be almost equally toxic. This was confirmed by additional tests (Table 2) in which the solutions of both pyrethrins and rotenone contained anisole. Normal butyl carbitol thiocyanate was much less toxic with respect to kill, but there was no difficulty in making a concentration that would give a high kill. With respect to rapidity and completeness of paralysis, however, normal butyl carbitol thiocyanate was more effective than the pyrethrins. It produced complete paralysis nearly twice as rapidly as the concentration of pyrethrins giving a corresponding kill. As might be expected the effects of rotenone developed relatively slowly.

In order to ascertain whether a combination of rotenone and pyrethrins is more effective than either insecticide used alone a comparison was made of the effects of three solutions in anisole-Deo-Base: 100 mg. rotenone per 100 cc. 100 mg., pyrethrins, and a combination of 50 mg. pyrethrins and 50 mg. rotenone. The mean mortalities given in Table 2 show definitely that the combination is not markedly more toxic than would be expected if the effects of the components were additive.

Relative susceptibility of second instar, adult male, and adult female roaches. Early in the work it was noticed that adult female roaches seemed to be much more resistant to the action of the O. C. I. (1937) than were adult males of the same age. The results of tests given in Table 3 confirmed this observation. Later a second series of tests, including second instar nymphs, was carried out in a more nearly quantitative manner. This was done by comparing the quantity of insecticide deposited during the period of exposure necessary to kill 50 per cent of the insects. The quantity of the deposit was determined by exposing one of a pair of tared glass plates to the settling mist for the required period, covering it with the other plate, and weighing. According to the results shown in Table 4, adult males are about 2½ and adult females about 4½ times as resistant as second instar nymphs.

Effect of sprays upon females carrying egg capsules. In preliminary tests in which females carrying egg capsules were sprayed with solutions containing 100 mg. pyrethrins, 100 mg. rotenone, and 4000 mg. normal butyl carbitol thiocyanate per 100 cc., the pyrethrins caused nearly all the females to drop their capsules, rotenone was nearly without effect, and the thiocyanate was intermediate in effect, causing about one half of the individuals sprayed to drop their capsules. A large number of the dropped capsules, apparently those that had nearly completed their development, hatched within a two week period following the treatment.

(*Turn to Page* 107)

Table 1. Comparative toxicity of solutions of pyrethrins, rotenone, and normal butyl carbitol thiocyanate in Deo-Base to second instar nymphs of the German cockroach. The rotenone solutions contained 15 per cent anisole by volume. An average of 40 insects used per test.

Date of Test	Mortality (per cent)								
	Pyrethrins			Rotenone			Normal butyl carbitol thiocyanate		
	50 mg. per 100 cc.	50 mg. per 100 cc.	100 mg. per 100 cc.	150 mg. per 100 cc.	100 mg. per 100 cc.	150 mg. per 100 cc.	3000 mg. per 100 cc.	5000 mg. per 100 cc.	7000 mg. per 100 cc.
3/28	32	78	85	26	57	42	24	78	94
3/30	39	53	62	41	65	86	32	70	95
4/1	44	64	80	70	74	98	74	78	93
4/4	13	36	78	43	58	72	12	85	86
4/6	11	33	71	13	58	55	9	40	75
4/8	6	45	58	3	51	46	9	26	90
4/11	6	23	67	22	55	78	4	37	83
4/13	26	27	59	29	72	75	13	66	92
4/15	38	56	73	74	72	92	22	76	94
4/18	13	41	51	9	31	64	10	54	85
Mean	23	46	68	33	59	71	21	61	89

Table 2. Comparative toxicity of a combination of pyrethrins and rotenone to second instar nymphs of the German cockroach. Solutions made up with Deo-Base and containing 15 per cent anisole by volume. An average of 40 insects per test.

Date of Test	Mortality (per cent)		
	100 mg. pyrethrins per 100 cc.	100 mg. rotenone per 100 cc.	50 mg. pyrethrins plus 50 mg. rotenone per 100 cc.
4/22	51	18	31
4/22	46	37	37
4/22	26	10	39
4/22	33	32	29
4/22	26	49	13
4/25	20	31	14
4/25	18	40	33
4/27	74	67	44
4/27	53	49	39
4/27	54	53	32
Mean	40	39	31

The ultimate test of the real repellent value of a stock spray depends on the protection it gives the cattle outdoors as well as in the barn.

Ewing-Galloway.

Fly Control For Livestock

A discussion of flies causing livestock losses and their control by insecticides and repellents

(Part II)

By Dr. E. G. Thomssen and Dr. M. H. Doner
J. R. Watkins Company

IN more recent years, both American and foreign literature have contained many educational articles regarding the seriousness of the fly pest and the necessity of expanding control methods. The phrase "swat the fly" has come to be a national slogan. In addition, there have been developed numerous methods of exterminating flies among other things to prevent their injuring livestock.

An outline for the control methods of flies is as follows:

I. Mechanical Control.
  A. Hand destruction (swatting).
  B. Mechanical exclusion (screening, nets).
  C. Traps (For adults [11, 25] and maggots [34]).
  D. Flooding.
  E. Electrified screens.
  F. Destruction of Breeding Media.

II. Chemical Control.
  A. Insecticides.
    1. Stomach poisons (poison baits).
    2. Contact poisons (pyrethrum and rotenone fly sprays and dusts; larvicides).
  B. Repellents.
  C. Combinations of Insecticide and Repellent.

All these forms of control when properly utilized, present important means of repressing the flying insects which annoy livestock as well as man in caring for the stock.

The basic method of fly control is the prevention of fly propagation. The practical value of fly trapping, disposal of breeding media such as manure piles, droppings in animal pens and corrals has been demonstrated by Fenton and Bieberdorf (12) in their work at the Oklahoma A. & M. College Farms and by Munro (25).

Regardless of the value of the various methods of mechanical control, it has been well proven that such devices cannot gain widespread use. The objection seems to be that too much time and work are required. The farmer, dairymen and stock breeders will not give the time or effort to the methods necessary to reduce fly breeding by the mechanical methods outlined.

In considering the relative value of each of the fly control methods on livestock, chemicals are utilized most satisfactorily and most widely, far outclassing in value any other known method. Moreover, chemicals can be applied quickly and

easily. Certainly, the use of chemicals for controlling insects is well established with respect to killing flies. The following outline indicates the chief uses of chemicals in fly control:

I. For Control of Larvae (larvicides).
   A. Mosquitoes (petroleum oil spread as a film over water surfaces, arsenicals (18), rotenone.
   B. Screw-worm larvae (pine-tar oil, benzol for destroying larvae on wounds).
   C. Warbleflies (derris powders, ointments and washes, benzol and carbon tetrachloride for killing larvae in backs of stock).
   D. Bot flies—horses, etc. (carbon disulfide as a drench).
   E. In manure (borax, lime, powdered hellebore in water, etc.).
   F. Internal treatment of animals for prevention of horn fly larvae in manure (phenothiazine) (19).

II. For Control of Adult Flies (Sprays).
   A. Repellents (pine tar derivatives, fish oil, creosote, etc.).
   B. High kill sprays (pyrethrum, derris, organic synthetics).
   C. Combination of insecticide and repellent.

In our considerations, we are concerned more particularly with the chemical control of adult flies through spraying. We will, therefore, limit our discussion to fly sprays.

Repellent Sprays

The Chemotactic Responses of Flies. Human beings and insects exhibit profound differences in the structure and arrangement of those sensory organs that are adapted for perceiving differences in the chemical sensations which are classed as smell and taste. In man, the olfactory sense resides in receptive organs or the receptors located in the mouth and nasal passages. It is believed that the sensations of smell or taste cannot occur without the presence of moisture. That the efficiency of the olfactory and gustatory senses of man have been greatly lessened from the condition that exists among other vertebrates needs no vertification. In considering these senses of insects, different conditions exist. Instead of being confined to the moist membranes of a very limited part of the body as in humans, the olfactory organs of insects are widely distributed over the external surface of the body, including the appendages (base of wings, legs, antennae) while the taste organs, while usually confined to the mouth or mouthparts, may be located in the feet as in the case of butterflies.

Due to the external position and general distribution of the chemoreceptors on an insect's body, it is apparent that insects are decidedly responsive to chemical conditions in the environment. This has been strikingly borne out in chemotactic tests conducted upon several different species of insects. Certain scents, unnoticed by man may attract certain insects from great distances. Likewise, certain scents are repugnant to insects that only very weakly affect the olfactory sense of man.

Discussion. The fact that certain chemical substances repel flies has led to the employment of these chemicals in sprays for application to livestock. The essential function of repellents ("stock," "animal" or "cattle" sprays as they are popularly called), is to relieve animals of the torment of several species of flies, but, as Graybill (16) suggests, "without any reference to the control or eradication of such pests."

The development of repelling sprays has not been a simple problem, due to the diversity of species of insects involved and their varying chemotactic sensitivity. Two special problems confront the investigator: (1) the development of sprays that have repellent properties for flies over a sufficient length of time to justify their use and (2) which at the same time are non toxic or harmful in other ways to livestock.

The more popular repellents may be roughly classified as follows, with reference to their practical application:

I. Repellents for local treatment (screw-worms, buffalo gnats, bot flies, etc.).
II. Repellents for general treatment.
   A. Oil emulsions (soy-bean oil, tar oil, fish oil, pine-tar oil).
   B. Straight oil sprays.
   C. Dusts (Employed to a limited extent, chiefly in an experimental stage).

Sprays belonging to the first class have been found quite efficacious by investigators. Such materials as derris and pyrethrum, pine-tar oil (dehydrated and acid free) for screw-worms; potash fish oil soap, lubricating oil, and water mixture (37) for buffalo gnats; and have given fairly effective control.

Sprays for general application to livestock may be either oil emulsions or straight oils. Those of the first class, while limited in number, have apparent value, chiefly in lessening chances of injury to livestock as often occurs when straight oils are employed. Using a water emulsion of pyrethrum, pine oil and a small amount of petroleum oil was reported by Regan and Freeborn (33) to be "as efficient in repelling flies as the petroleum sprays and ... less detrimental to the cows." More recently, Bishopp (4) advocated the use of a pine-tar oil emulsion for protecting livestock from the southern Buffalo gnat. Cory (10) reported that a 3 per cent emulsion of pine-tar creosote afforded relief of stock from stable and horn flies for two days. A proprietary soy-bean oil product is used as an emulsion and is reported to be effective as a repellent.

By far the majority of stock sprays are of the non-emulsifiable type, utilizing various types of petroleum oils as a carrier for the particular repelling agent or agents used. Studies by Freeborn (13, 14) and his associates have shown that oils of low viscosity or low unsulfonatable residue, or oils of high viscosity and of low unsulfontable residue caused definite burning of the skin, especially in hot weather.

Moreover, it was shown by these workers petroleum oils reduce the "efficiency of the cow's thermoregulatory apparatus to a point where she loses control of her body temperature at a low environmental temperature." Previous writers have pointed that, while the contentions of Freeborn and his associates are based on their use of from 250 to 500 cc. of an oil sprayed on a single animal, such amounts are excessive, whereas reasonable amounts (0.1 pint per animal or 47 cc.) of spray, applied once daily, would probably not be harmful. In future experiments they applied less excessive amounts of spray (20 to 80 cc.). It was concluded nevertheless that injury can occur with any commercial spray where the body temperature is raised 5° F. following normal spraying.

Recent studies by Searles and Snyder (38) indicate that the type of atomizer employed bears a distinct relation to the efficiency with which an oil can be applied to livestock. Attendant to this problem, is the general lack of understanding among users with reference to the correct application of fly sprays. Too frequent or too heavy applications of certain types of stock sprays result in deposits of oil on the animal's hide that induces burning.

Livestock insectifuges embrace a long list of materials of widely varying chemical and physical properties. Scientific studies of many investigators have conclusively shown that the value of a substance as a repellent cannot be consistently correlated with either the boiling point of the material or its chemical constitution. Crank case oil, fish oil, creosote, pine tar oil, pine oil, carbolic acid, essential oils and certain synthetic organic materials have been and continue to be employed in stock spray formulae. In some cases materials distinctively repulsive to humans have been selected, believing that they would act likewise toward flies. Tests with a wider range of materials have clearly shown that flies are repelled by materials that may be more or less pleasant to human beings. The use of certain essential oils are cases in point. Other materials, possessing apparently little or no odor to humans at least, have been found to be quite efficacious in repelling flies.

The efficacy of repellents as such is determined by an array of laboratory and field tests. While laboratory tests often indicate what may be expected of a repellent in practical use in the barn or field, it remains a fact that the methods involving the actual spraying of cattle offer the most reliable means of evaluation. As one writer (34) expresses it: "The ultimate test of the repellent value of a stock spray is the degree of protection from flies which it gives the animals in the barn and in the fields, and difficult and time-consuming as such comparative tests are, there is no satisfactory substitute for them. All preliminary results and conclusions must get their final check from field tests under carefully controlled conditions." Space does not give an opportunity for a discussion of the different methods used by various investigators.

Contact Sprays

In the work of Fenton and Bierberdorf (12) already cited it has been clearly demonstrated that contact stock sprays present an important adjunct in fly control, pointing out that "whenever fly spray was used more or less regularly, the fly population (according to trap records) dropped considerably." The tremendous quantities of liquid insecticides used for this purpose bears out their conclusion as far as consumer acceptance is concerned. The manufacture of pyrethrum and other contact stock sprays in this country is on the increase. This is indicated by the total gallonage sold from year to year. Many new brands of contact sprays have appeared on the market in recent years. They are comprised of a toxic ingredient carried in a base oil which may be any one of a large series of mineral oil fractions.

The extract of pyrethrum flowers is generally employed as the toxicant in most stock sprays of the killing type. Ready prepared and assayed pyrethrum extract is used or ground flowers are extracted directly by the oil. Most such sprays, when tested according to the Peet-Grady procedure for testing household fly sprays, give a kill against houseflies (*Musca domestica*) of around 60 per cent on the average. The fact that increasing the amount of pyrethrum over a certain maximum does not substantially increase the kill, is interesting. Consequently, in efforts to develop high kill sprays, it became necessary to either fortify pyrethrum with something else or substitute pyrethrum with materials of greater toxicity.

The method of fortification is commonly employed. This is accomplished chiefly by the use of such materials as organic thiocyanates or other organic synthetics. Rotenone has been found to be efficacious when used in conjunction with pyrethrum. As substitutes for pyrethrum a number of materials are being used, but there still remains the fact that pyrethrum, in its comparative safety to humans and its not unpleasant odor is, by and large, the most commonly used fly toxic agent.

Considerable variation exists with respect to the choice of oils used for manufacturing stock sprays. Oils of the kerosene type are used most commonly in household sprays. These are usually water-white in color, free from objectionable odors, and substances that stain fabrics or cause deterioration of the pyrethrins. The selection of the proper base oil for fly sprays has been discussed at length by Gnadinger (15).

It must be borne in mind that pyrethrum stock sprays are not all-purpose insecticides. That is to say, such sprays are effective for certain insects affecting livestock and quite ineffective for others. For example, preliminary tests of pyrethrum sprays upon several species of horseflies by MacCreary and Pearson (24) have led to the view that their tolerance was "considerably less than a healthy strain of laboratory-bred house flies." The housefly (*Musca domestica*) ex-

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The FARM as a MARKET for INSECTICIDES

By Dr. J. J. Davis*

Purdue Univ. Agric. Experiment Station

ALTHOUGH the future of household insecticides on the farm is a subject of interest to manufacturers of these products, I have been somewhat uncertain as to just what I could contribute in a discussion of this subject. I have concluded that you feel that there is a potential market for your insecticides on the farm which you are not now reaching, and that you are interested in this market for household insecticides, and how this market may be reached. In other words, we assume that good insecticide products are now available for practical control of insect life on the farm and our problem is to get the farmers to use these controls to greater advantage.

And so, assuming practical controls have been developed and are available, I would like to offer for your consideration a review of the insect problems on the farm, why this market is not being reached adequately by the manufacturing industry, and perhaps show you what is being done by entomologists to develop this trade for you and how you may benefit and develop this large potential market.

Insect Problems on the Farm. May I very briefly give you a picture of the insect problems confronting the farmer, which perhaps may show you why certain insect problems are being adequately handled by farmers, while others, including household insect problems, are given little attention.

Our extensively grown field crops, of comparatively small per acre value, such as corn, wheat and clover, have many insect pests including white grubs, Hessian fly, chinch bug, grasshoppers, clover seed midge, webworms, and a host of others. Insecticides are seldom practical for the control of insects attacking these extensively grown crops and therefore farm practices, such as rotation, time of seeding and harvesting, method of plowing and cultivation, etc. are recommended and used. They have been adopted fairly universally because the farmers have realized the necessity of protecting their money crops and also because most of these practices are good practices for growing the crop regardless of the insect.

Every farm has its vegetable garden, large or small. Vegetables are more intensively cropped and insect control by the use of insecticides is practical. Farmers see the damage and realize the necessity of adopting means of protecting these crops which are an essential part of the farm. In general the remedies are of two classes, namely, stomach poisons, such as lead and calcium arsenate and the fluosilicates, for insects with chewing mouth parts, and contact insecticides, chiefly nicotine, pyrethrum and derris, for insects with sucking mouth parts. These materials are available everywhere in small or large quantities, they have been well advertised and because of a demand, state and federal agencies have sponsored demonstrations and other means of showing the farmer the materials to be used and how they should be used.

The farm orchard is still in existence but is a neglected part of the farm in most cases. As a rule, unless the orchard is of commercial size calling for major attention, the farmer does not have the proper equipment, is unable to correctly time insecticide applications, and these operations interfere with the regular and more important farm activities, so that insect control in the farm orchard is given little consideration. I presume the farmer would accept the version as recited by Abe Martin some years ago. Kin Hubbard, as Abe Martin, once wrote as follows: "Th' currant louse, a tiny green pest, is well organized an' persisten this year. Its presence may be detected by th' curlin' up o' th' currant leaves. It may be dispersed effectually by layin' on your back under th' infested currant bush an' sprayin' vigorously upwards, or you kin buy currants," and so, in the case of the general farmer, he doesn't need to worry about his wormy apples, for he can buy his apples.

The average farm always has poultry and livestock in few or large numbers. The average farmer has learned the importance of controlling poultry lice and mites, cattle lice, hog lice, and many other common animal parasites and does protect his animals from such pests. However, there are some animal parasites, and by no means the least important, which are passed by with scarcely a thought. I refer in particular to the several annoying cattle flies and bot flies. For some reason, perhaps because the importance of

*Address before the 24th Annual Summer Meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., June 15, Lake Wawasee, Ind.

these pests have not been sufficiently called to their attention, these pests have not been given active attention by farmers. May I add that there is little doubt that the rather general adaption of controls for poultry parasites is due largely to the activities of extension specialists, who have effectively demonstrated the simplicity and value of controls. And furthermore, it may be stated that in the few regions where bot controls and cattle fly sprays have been demonstrated, the increased adoption of such practices have been notable.

Among the most important insect problems on the farm today are those which affect stored products, particularly wheat. Grain weevils and grain beetles are responsible for enormous losses to the farmer, because of direct loss and by dockage due to insect infestation. This loss, you can see, is a total loss inasmuch as it comes to the product after all expenses of growing and harvesting the crop has been expended. Present methods of protecting grain are fairly effective but if the "Ever Normal Granary" becomes effective the problem will become a much greater one because of longer storage of grain.

Finally, we come to those pests which are nearest to the home, the various household pests, and yet these insects which share the privacy of our homes, are perhaps given least consideration on the farm. These are not only annoying but destroy our clothing, our furniture and other valued properties, and above all affect our health as carriers of disease or otherwise. More will be said of these problems later.

I have given you a very brief summary to show the variety of problems confronting the farmer. I have tried to make you aware of the fact that some of these are problems sufficiently recognized by the farmer to insure adoption of controls and that others are practically ignored, not that they are of no greater importance, but because they are not recognized as problems which directly affect the pocketbook and because, for reasons I will explain later, they have not been properly or forcibly called to the farmer's attention.

An Example. The federal and state investigators are constantly working to develop practical controls for destructive or otherwise obnoxious insects. Likewise they are endeavoring to determine the practical utilization of recommended treatments and whether or not such treatments have a harmful effect, directly or indirectly, on the host. Perhaps this is sufficient excuse for me to report on a study which we made over ten years ago and which has never been published or otherwise made public. It directly affects the sales problem of you who are manufacturing cattle fly sprays.

The question has been raised regarding the effect of cattle fly sprays on dairy cattle. It has been generally recognized that protection of cows from flies was a humane act, both for the animals and for the milker. However, some studies have been presented which indicate that the irritating effect of the spray applications more than off-set the value in reducing irritation and that the end product, milk, was decreased rather than increased. Our own tests, which I will briefly relate, show us, at least to our satisfaction, that proper spraying and the resultant protection of cows from the annoyance of flies does result in a larger per year yield of milk.

Our experiments were conducted at the Polk Dairy Farm, near Indianapolis, from June 21 to September 9 in 1926. A full time assistant, C. H. Keipper, was employed during this entire period to supervise spraying and to obtain all essential records regarding the activity of the treated and untreated herds. The two herds compared were in sheds at opposite ends of the central barn. The results may be reported briefly as follows: During the first few weeks of the tests and before flies were abundant, the sprayed animals showed a decrease in milk production. In other words spraying seemed to have a definite adverse effect on the animals. However, as the animals became accustomed to the spray and as the flies became increasingly abundant, the treated animals returned to their normal or near normal milk production, while the unprotected animals showed a gradual but distinct decline in milk production.

The net result was that the check or unsprayed lot showed a total net rate of decline of 32 per cent for the entire time of the experiment, while the average total net rate of decline for all sprayed lots combined was only 13.4 per cent, or a difference of 18.6 per cent in favor of the sprayed cows. Factors, such as lactation, were considered in the final analysis. Thus, it was concluded, that for a herd of ten cows, producing an average of 300 pounds of milk a day at the beginning of the fly season, spraying resulted in a saving of 81 pounds of milk every 10 days, or a total for 90 days, which is the normal fly season, of 729 pounds of milk. The value of this saved milk at 4 cents per pound, would be $29.16. The cost of spraying these ten cows under the conditions of the experiment with the cheaper material (crank case oil and oil of tar) was approximately $6.00, for both labor and material, leaving a net margin of $23.16 saved by spraying, over and above all costs. The margin of saving when a more expensive material is used, (Bovinol, a Standard Oil Company product, in this case) is of course considerably less, being approximately $6.66. The figures on the value of cattle fly sprays as here shown are probably minimum values because the Polk Dairy Farm is unusually well kept and the flies are of less significance than on the average dairy farm where the fly problem is more important.

Briefly, the beginning of spraying operations was attended by a sharp drop in milk production for the first 15 or 20 days on the part of the sprayed cows. This was probably due to nervousness induced by an operation to which the cows were unaccustomed. This decline, however, was followed by a sharp recovery during the next 20 days back to normal, and thereafter the beneficial effects of protection asserted themselves. These studies showed the need of conducting tests throughout

the summer and the unreliability of tests conducted for but a few weeks.

I have referred to this cattle fly experiment to give you some information which I think should be available to you, and also to urge you to maintain a contact with federal and state experimental stations who doubtless can frequently give you information which will greatly aid you in your sales problems. But at this point may I also urge you to use such data in its entirety and with fairness. I have known of too many cases where entomologists have hesitated to cooperate with manufacturers because of undue advantage taken.

What are the Household Insect Problems on the Farm? Obviously the major insect problems on the farm will vary in different localities and under different conditions. Here we will confine ourselves to a consideration of the problems of the home. Our contacts with farm folk are rather definite in permitting us to conclude that flies are the paramount problem and this is true not only in Indiana but throughout the United States. The second and third place of importance goes to ants on the one hand and clothes moths and carpet bettles on the other. Taking the country as a whole one is perhaps as important to the farm wife as the other, although there is no question but that the clothes moths and carpet beetles cause the greater financial loss. In Indiana mosquitoes are perhaps rated as next in imporance by most farm folk, followed by cockroaches, bed bugs, fleas, and silverfish. Blackflies or punkies, and chiggers are frequent problems but more localized, and there are an increasing number of inquiries regarding spiders, possibly partly due to publicity given the black widow spider in recent years. Another pest which is apparently on the increase or at least receiving more attention is the tick, particularly the brown dog tick. Termites, if we include them in the category of household pests, is a major problem on the farm as well as in the city. In addition to these we might include the flour beetles and moths, bean weevil, and others which destroy cereal products in the home. Finally, we should of course include rats and mice as major animal problems, although they are not arthropods.

Research in Household Insects. The entomological problems undertaken by the federal and state investigators are of course those dealing primarily with pests of commodities rather than with those which are annoying or destroyers of materials in the home. This is to be expected because such investigators must undertake those problems for which there is a demand. Obviously the greatest demand for information and service will come from farmer organizations and regarding basic products of the farm because of the economic or financial appeal. However, the amount of research in the fields in which you may be primarily interested has been increasing noticeably in recent years. You have only to read the report of Dr. Roark in the June issue of *Soap* and compare with literature references in years past to realize that research in the field of household insects is developing fast. There is an increasing demand for information on the control of household insects and we may anticipate an increasing amount of research in this field.

Household Insect Control. As already stated, it is my understanding that you largely represent the manufacturers of household insecticides and fly sprays. Your products are extensively used in urban areas, and yet their use on the farm is small in comparison to the need. In comparison with the insecticides used to protect cultivated crops, the volume is small. Why do we have this situation? Perhaps because the farmer sees the profit he receives by protecting his crops which is not so evident in the case of household insects and those insects which annoy cattle. Possibly you are at fault in not properly "selling" your products to the farmer. Perhaps, and I would rather say probably, there are too many inferior and ineffective insecticides being marketed. Surely it is not because remedies are unknown, for we have excellent controls for the majority of such pests. As the Zenith Radio Hour would say, "What is it?"

I will not try to answer this question, except to say that it has been given little attention by manufacturers and entomologists. Rather I would like to tell you what is being done to aid the farmer in the control of home-infesting insects and to show you there is a silver lining even in the midst of a depression.

It was obvious to the Federal Department of Agriculture and the State Agricultural Experiment Stations that a great amount of the results of research was being accumulated in reports and bulletins and that too small a percentage of the results of research was being utilized by farmers. And so, there was organized what is now known as the Extension Service, a service intended as a means of carrying to the people, by demonstration or otherwise, the results of research, and in this way "sell" the results of research and secure their adoption to the benefit of all.

The growth and popularity of this service is evidence of its untold value to the farmers of the nation. Of what interest is this to you? Entomologically speaking, it brings to the farm people modern methods of insect control, it creates a need for more and better insect controls, it creates a need and desire to use the materials recommended and doubtless increases the sale of insecticides.

Entomological extension work in most states has dealt with the problems affecting crop and animal production, just as has been the case of research. Very little consideration has been given to extension work with home insect problems. In Indiana, however, we have three extension projects which relate to home problems and these have been unusually successful, so much so that we have far more requests than we can possibly fulfill. These projects include (1) Insecticide Dealers, (2) Insects of the Home, and (3) Termites.

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Comments on Morpholine in WAX POLISHES

By H. F. Robertson and A. L. Wilson

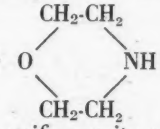
Mellon Institute

THE character of wax polish emulsions, particularly the particle size of the dispersed solids, has a direct bearing on the results obtained in their use. Fine emulsions generally yield a higher gloss, while coarse emulsions give dull finishes. The type of emulsion and the dispersing agent used also are of prime moment not only in the lustre of the dried film, but also in its water resistant qualities which have become of such wide significance commercially in the field of wax emulsion polishes. It is in this conection that the organic amine, morpholine, which not so long ago became available in commercial quantities and at commercial prices, may now enter the floor wax picture in a larger way, although it has found considerable experimental use in surface-coating emulsions for the past two years.

High gloss and water-resistance are two of the most important characteristics of a good floor wax, as most every manufacturer knows. Most commercial emulsifying agents are non-volatile and stable compounds which stay in the film, giving a tendency to re-emulsify if wetted. Attempts to increase water-resistance with the use of these non-volatile agents, such as ordinary soaps, have meant either a decrease in concentration, or the use of less effective emulsifying agents with the danger of unstable emulsions or loss of gloss in the dried wax film. Morpholine emulsions do not have these drawbacks. Being strongly basic, it combines with fatty acids to form soaps. These morpholine soaps, such as the oleate and stearate, have made possible the preparation of stable emulsions that dry to films with superior water-resistance.

Properties of Morpholine

Morpholine is a colorless, mobile liquid with an ammoniacal odor which is greatly diminished upon dilution with water. It is a definite chemical compound of formula



It has a specific gravity of 1.001 at 20/20°C. Though it boils at 128.3°C., morpholine is unusual in that it has a volatility approaching that of water.[1] Moreover, aqueous morpholine solutions evaporate with little change in composition and with the maintenance of a constant alkalinity. This volatility, characteristic of morpholine, together with the hydrolyzing tendency of its fatty acids soaps, determines the behavior of its emulsions during the process of drying. Sufficient morpholine is found to remain in the film during the first stages of drying to yield a bright deposit. During the final stages, the amine is almost completely vaporized with the water to leave a film resistant to subsequent water treatments.

As morpholine does not evaporate selectively from its water solutions, there is no boil-off loss in making emulsions at the elevated temperatures of 80-95°C. used in wax-emulsion technic. In addition, it is not lost from emulsions standing in open containers.

Emulsions prepared with morpholine are also distinguished by their stability and small particle size. The oil-in-water type is ordinarily resistant to "breaking" if the particle size averages four microns or less. In a microscopic examination of a group of morpholine polishes, most of the particles averaged under one micron (0.0001 cm.) in diameter with only a few as high as six microns. Gloss of a dried wax film, other things being equal, is dependent upon the particle size of the emulsion. Coarser emulsions yield comparatively dull surface coatings, while the very fine wax dispersions obtained with morpholine produce films of high gloss.

Morpholine Polishes

Various automobile, floor, leather, and furniture polishes are produced with morpholine soaps. A carnauba wax emulsion which may be prepared as a translucent, almost water-clear solution is typical. This polish, on spreading evenly over a surface, evaporates to a film of a high gloss without rubbing.

The following method of carnauba wax emulsification is recommended for the production of a smooth and stable dispersion. Because of the possible variation in composition of the commercial ingredients and the varying conditions which may attend the compounding, modification to meet individual requirements may be necessary. The given composition, however, can serve as a useful basis for comparative experimental work. The choice of a good grade of carnauba wax

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	Parts by Weight
Carnauba wax	11.2 parts
Oleic acid	2.4 parts
Morpholine	2.2 parts
Water	67.0 parts

Melt the carnauba wax carefully with the oleic acid in a hot water or steam bath and maintain the temperature closely at 85-90°C. Stir until well mixed, slowly add the morpholine, and stir constantly until the whole mass is quite clear. In the meantime, the water should have been brought to the boiling point in a separate kettle. Add it slowly, in very small portions, to the hot wax mixture, with steady stirring, making certain that each small portion is well incorporated before a further addition. During this addition, the mixture becomes increasingly viscous and when about two-thirds of the water has been added, it has the appearance of petrolatum. At this point, the emulsion reverts from a water-in-oil to an oil-in-water dispersion and, as it becomes thin and soapy, the remainder of the water may be added rapidly. The total time for adding the water should be about 30 minutes. While slowly stirring, allow the mixture to cool.

Control of temperature is important, and a temperature close to 90°C. has been found most successful. The hot-water or steam-jacketed kettle maintains a satisfactory temperature, prevents overheating, and also averts caking of the wax on the walls of the container. The method of stirring the mixture greatly affects the results. Ordinary speed stirring with a propeller does not afford proper emulsification,—whether by destroying the gel structure or incorporating air. Best results are obtained with a hand-operated paddle or a slow-moving, large-bladed mechanical propeller. The addition of water to the mixture may be made too slowly as well as too rapidly.

The addition to the carnauba emulsion of a water solution of one of the group of alkali-soluble resins is indicated for most applications. This procedure has been found to produce certain beneficial effects on the film, notably increasing its wetting action on surfaces to be covered and improving flow-out and leveling characteristics. From 10-15 per cent of such resin, based on the weight of the carnauba wax, is usually employed. Typical formulations tested were as follows:

Manila resin	1.5 parts
Morpholine	0.6 parts
Water	15.1 parts

—— ♦ ——

Shellac	1.5 parts
Morpholine	0.2 parts
Water	15.5 parts

—— ♦ ——

Rosin	1.5 parts
Morpholine	0.6 parts
Water	15.1 parts

The procedure for forming these solutions varies with the resin chosen. Manila or pontianac resins are used preferably in powdered form, so that they may be dissolved more readily. The solubility of these resins increases with aging. Mix the morpholine thoroughly with the Manila or pontianac to obtain a viscous, gummy mass. Cover with about two pounds of the water and allow to stand for an hour or overnight. Next, stir until homogeneous and add the remaining water in small portions. This procedure should give a clear solution from which any small amount of undissolved resin can be filtered or decanted. In the case of shellac, only fresh material dissolves with ease. The best procedure consists in beating the entire resin formulation together and maintaining the temperature just below the boiling point for about one hour. Under occasional stirring, the major part of the shellac will dissolve and the solution may be decanted from solid impurities. Finally, in the case of resin, melt the resin over a steam bath and stir in the morpholine until the mixture is homogeneous. While maintaining the temperature near the boiling point, slowly add the water with constant stirring. A clear and practically complete solution can thus be obtained. In all these resin formulations, it is possible to substitute an equal weight of aqua ammonia for the morpholine with slight loss in effectiveness and ease of manipulation.

A finished polish is formed by adding one of the above resin solutions to the previously prepared carnauba wax emulsion. Filtering or decanting the mixture from impurities or unincorporated wax or resin is usually desirable. Of the given resins, rosin is the most effective in reducing streaking in the drying polish film, but is not to be recommended for polishes applied to rubber or linoleum. Manila type resins are only slightly less effective but are less readily dissolved than the shellac. For use on unfinished wood and composition paneling, where the surfaces are somewhat absorbent, an increase in the solids content with subsequent increase in viscosity and film thickness is advisable. This improvement may be accomplished by reducing the water content of the carnauba wax emulsion up to one-third, as well as by a further slight reduction of the water content of the appropriate resin solution. In this way, the concentration of film-forming ingredients in the polish may be raised from the given 15 per cent to about 20 per cent.

Another morpholine polish uses the less expensive paraffin wax in the place of most of the carnauba wax. This polish does not dry bright, but can be buffed to a fair luster. It is prepared as follows:

	Parts by Weight
Carnauba wax	2.6
Paraffin wax	10.6
Oleic acid	3.0
Morpholine	2.6
Water	100.0

The oleic acid, morpholine, and water are weighed out and the mixture heated in a kettle to 100° C. After the solution is boiling gently, stir carefully until the soap (formed by the reaction of the morpholine with the oleic acid) is dissolved, so that a smooth solution is obtained with a minimum of foam. In a separate steam-heated container melt the carnauba and paraffin waxes until a temperature of 85 to 90° C. is reached. Do not allow the temperature to rise

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CATTLE SPRAYS

Their Composition and Application

By E. M. Searls and F. M. Snyder*

Dept. of Economic Entomology, Univ. of Wisconsin

THE dairy farmer has long had a serious fly problem to contend with,—annoyance to his men and domestic animals as well as spread of contamination upon the milking utensils and milk products being various phases of this problem. Sanitation and the prevention of breeding places for flies, of course, constitute the best method of dealing with the problem. This, however, is a neighborhood project and it seldom happens that all of the dairymen in a neighborhood provide for the proper disposition of materials in which flies breed. Thus chemical methods of control involving use of cattle sprays are quite commonly resorted to.

Most studies of the chemical control of flies upon dairy animals, to date, have shown that the flies usually involved do not appreciably reduce milk production, and that heavy applications of some oils are injurious to the animals. From this it might appear that spraying dairy animals is quite without justification.

It must be admitted, on the other hand, that if the effect of a stable fly (*Stomoxys calcitrans*), or deer fly (*Chrysops* spp.) bite upon man is a criterion, it is difficult to believe that cows could produce their maximum quantity of milk if they are continually attacked by these flies. Entirely aside from these considerations is the problem of keeping dairy animals free from biting flies during milking time. No dairyman who has had his milking apparatus destroyed, had quantities of milk spilled, or been injured by cows trying to kick or switch flies can doubt the desirability of keeping the cows free from flies at milking time at least.

John Powell & Co., New York, have maintained a fellowship for the past three years at the University of Wisconsin for the purpose of studying this problem of cattle fly control, and the following is a brief report of some of the results of the study.

For the present purpose flies may be divided into two groups according to their feeding methods. This classification serves to divide the flies further according to the places in which they are found and the damage which they do. It also divides the flies into two groups according to the particular spraying problem which they present.

The first group would include the flies found about the stables, in the milk house, creamery, and cheese factory. This might be called the house fly group. These flies usually have lapping mouth parts and are unable to pierce the skin or directly injure the animals. They are a serious problem, however, in that they spread contamination and filth about.

The second group includes flies with piercing and sucking mouth parts. Their effect upon the dairyman and dairy animals is more direct and better known. These are the flies which attack the animals in the field and the ones which are the usual cause of kicking and switching in the barn.

Stable flies and horn flies (*Lyperosia irritans*) are the two species usually found attacking dairy cows in Wisconsin, although some other species are often seen. Of these the stable flies are the most troublesome. It has been shown that when these flies become very thick upon the animals, they may interfere with milk production. The name "stable fly" is something of a misnomer for stable flies seldom enter stables except in the best lighted parts, such as at the open doors and windows. Stable flies grow in decaying vegetable matter such as straw and corn cobs. They inflict painful wounds upon man and frequently cause cows to kick and switch.

Stable flies visit the animals only for the purpose of feeding. When they have gorged themselves with blood they leave and rest on some nearby object until the blood is digested. One feeding a day is usually sufficient for one fly although some feed twice.

Horn flies grow in fresh cow manure in the pasture. It would be difficult, indeed, to control them by sanitation. They are, by far, the most numerous upon the animals and remain upon the animals throughout the day. They usually feed in clusters at the base of the horns although the clusters may be on the flank or other parts of the body. It has not been proved that they materially lower milk production. They seldom, if ever, attack man.

Horn flies may be distinguished easily from stable flies by their feeding position upon the animals. Horn flies feed with their heads toward the ground while the stable flies feed with their heads pointed

* Before 24th mid-year meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., Lake Wawasee, Ind., June 14, 1938.

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upward. Flies with lapping mouth parts are seldom still. They hurry about the animals, stopping occasionally to eat, while the horn flies and stable flies soon settle down to a feeding position where they remain for some time unless disturbed.

The choice of a spray to use in the dairy barn, milk house, creamery, or cheese factory is relatively simple. Oil sprays are the best for this purpose. It is necessary only to procure a spray which contains nonpoisonous material in sufficient quantity to kill the flies on contact, and which has for its base a light refined oil which evaporates readily. An odorless spray, or a spray possessing an odor which will not taint the milk, is essential.

Cattle fly sprays may be divided into two general classes according to the use for which they are intended. The first class includes those sprays which keep the flies from the cows while they are being milked. This class is designed primarily for the convenience of the dairyman. The second class of sprays is designed to keep flies away from the cows for much longer periods. This class is designed for the comfort of the animals as well as the dairyman and may be expected to keep the animals fairly free from flies during most of the day in the pasture.

THE usual type of cattle fly spray consists of an insecticidal and fly repellent ingredient dissolved in an oily base. The nature of the oily base and the amount and nature of the insecticidal ingredient used determines the difference between the two classes of cattle fly sprays.

In those sprays used to keep flies from cows during the milking period, the oily base consists of a highly refined readily volatile oil. In this case, the function of the oil is only to serve as a medium for the dispersion and application of the insecticides. This class of spray is usually used in the milk room as well as in the dairy barn. For this reason, a readily volatile oil is necessary. Less volatile oils would remain longer on the utensils, walls, and other equipment and parts of the barn, and collect dust. The use of strong-smelling fly repellents is not recommended in this class of spray because of the danger of tainting milk or milk products with undesirable odors. The insecticidal ingredients used in these sprays should be of sufficient quantity and quality to kill all flies hit with the spray and to keep the animals free from flies as long as the spray is present. Because of the volatility of the oil used in this class of spray, its effect is relatively short. When the oil evaporates, the spray loses its effectiveness very quickly.

More viscous and less volatile oils, are necessary in the second type of spray. The effect of this spray is expected to persist longer and it is therefore necessary to protect the insecticides and repellents from evaporation, oxidation, polymerization and other actions which destroy the insecticidal qualities of the chemicals used. At the same time, it is dangerous to use oils which are so heavy that they do not evaporate from the animals before the next spray is applied. Under these conditions there would be an accumulation of oil upon the animal which would probably be injurious.

Various materials are used to kill or repel cattle flies. In some sprays, both insecticides and repellents are used. As customarily used the word "repellent," refers to an ingredient which drives the flies away because of its odor and is quite different in its action from an insecticide. Few, if any, of the so-called "repellents" have insecticidal properties, although this is not necessarily the case. Contact insecticides which remain active for some time after application are excellent repellents. The repellent action is derived from the shocking or toxic action of the insecticide. When a fly lights upon an animal well covered with an active insecticide in oil, the insect is unable to withstand the reaction of the insecticide upon its feet.

Various "repellents" are added to cattle fly sprays. In many cases, it would seem that the spray manufacturers have used such oil soluble materials as they find most unattractive for themselves. Various oils such as oil of pine tar and some malodorous mixtures are used for this purpose. In some cases, the strong odors of the sprays are added to mask the odor of the active ingredients and, in part, probably to protect the manufacturer from imitators. Other materials are also added to some sprays for the purpose of emphasizing or prolonging the activity of the insecticides used. Some of these materials are thought also to have some repellent value.

In the present study it was found that none of the so-called "repellent" or "activator" materials studied were of value in repelling flies or materially prolonging the activity of the insecticides on the animals in the pasture. It was demonstrated, however, that a spray consisting of a suitable oil base plus a satisfactory amount of an oil-soluble contact insecticide acts quite effectively in both killing and repelling flies.

Of the insecticides used for this purpose, pyrethrum extract is probably the most common, and was found to be the most effective. A spray composed of 5 per cent of standard 20-1 pyrethrum extract in a refined oil of mineral seal range (45 viscosity) was found satisfactory in keeping cows reasonably free from flies from after milking time in the morning to after milking time in the afternoon.

Various synthetic insecticides were also found to be effective in repelling cattle flies. One of these, available commercially as Lethane 384, used at the rate of 4 per cent in the mineral seal oil, proved to be effective as a repellent.

In actual studies of the spraying of dairy cows it was found that 1 1/3 ounces of spray per cow was the least amount which could be expected to cover an animal efficiently for one spraying. Various

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THE United States District Court at Milwaukee, in a decision rendered on June 3, 1938, sustained the validity of the CUBE PATENT (Dennis Patent, Reissue No. 18,667, U. S. Patent Office) as applying to both powders and extracts of Cube.

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*The Timbo from Brazil is identical with Cube.

sprayers and atomizers were used during the study. It was found that there are many sprayers which are quite satisfactory in applying fly sprays of the house or stable type. It was necessary to be more careful in the choice of sprayers for the application of the heavier oils used in the sprays designed to protect the cattle in the field. For this purpose a sprayer adjusted to or adjustable to the particular spray is necessary. Sprayers adjusted to the application of the lighter household type of spray will usually divide the more viscous material into such a fine mist that it floats away in the air without touching the animals.

A quick and satisfactory method for testing the effectiveness of a sprayer with a particular spray is to spray some of the material at a piece of brown wrapping paper held about 2½ to 3 feet from the nozzle. This is the distance at which cows are usually sprayed. If the piece of brown paper is wetted quickly and uniformly without becoming too wet, the sprayer is well adjusted to that spray material.

In order to cover a cow effectively with a protective spray, it is necessary to spray each cow carefully. This need not take long. Using an electrically driven sprayer properly adjusted to the spray, it usually required about 25 seconds. This gave ample time to walk between the animals and give each animal a coating of the spray in much the same manner as paint is sprayed. It has not been found satisfactory merely to walk along behind the animals, directing the spray into the air above them and expecting it to drift downward and settle upon them. Even distribution along the flanks, neck, and legs of the animals was not possible by this method.

Dairy barns and buildings where milk is handled or stored may be sprayed at any time, provided a spray is used which will not taint the milk and proper care is taken that none of the spray gets into the milk. It seems desirable to follow some simple rules when the spray is applied to dairy animals, however. When milking is done in the early morning, there is usually no necessity to spray before milking. Horn flies remain upon the animals throughout the entire day but they do not seem to constitute any great annoyance. Stable flies which do annoy the animals seldom enter the stable and are seldom active before nine o'clock in the morning. For these reasons, when heavy base sprays, intended to protect the animals in the pasture are used, it is better to wait until after milking in the morning before giving the animals their protective coating of spray. Under moderate conditions of wind, temperature and humidity, a satisfactory spray of this type will keep the animals reasonably free from flies until after milking time in the afternoon. Only one spray a day is therefore necessary. When the lighter, household type of spray is used, there is no necessity to spray the animals for the protection of the dairyman and his apparatus until just before milking time in the afternoon. This, however, affords the animals no protection in the pasture.

A Few Cautions to Observe

1. Do not use sprays with strong odors where they might taint the milk.
2. Do not spray the animals with heavy sprays often enough to injure the skin.
3. Do not select sprays which contain chemicals toxic to man or animals.
4. Use a sprayer properly adjusted to the materials in the spray.
5. Select the proper spray for the purpose.
6. Select a spray which contains sufficient insecticide for the purpose in mind.
7. Cows must be well covered with spray in order to repel flies.

Tests on Roaches

(*From Page* 90)

Discussion

The foregoing investigation shows that it is possible to make quantitative comparative tests of kerosene-base insecticides against the German cockroach by a settling mist method. However, because much more time and labor are required to rear a given number of German cockroaches of known age than to rear the same number of houseflies, it would not be advisable to use the German cockroach for routine tests. Moreover, it is not necessary to use the German cockroach for routine tests, if the results of Peet-Grady tests on houseflies are correlated with those on the German cockroach by testing the same samples of several types of kerosene-base insecticides against both species. If such a correlation were once established, interpretations of Peet-Grady results in terms of the German cockroach could be made with some confidence.

Table 3. Difference in susceptibility of adult male and female roaches. Each lot was sprayed directly with the O. C. I. (1937) for 45 seconds.

Males	Females	Mortality (per cent)	
		Males	Females
20	17	100	29
14	13	71	0
6	16	100	37
14	11	57	0
11	16	54	6
22	13	54	0

Table 4. Comparative susceptibility to the O. T. I. (1938) of second instar nymphs and adults of the German cockroach.*

Stage	Exposure to kill 50%	Spray deposit
	Seconds	Mg. per sq. cm.
Second instar...	30	3.4
Adult male.....	120	8.8
Adult female....	600	15.2

*Average of five determinations.

It is possible that the usual fly sprays are not the most efficient liquid insecticides for the control of cockroaches. The present method can be used to determine the relative value of different petroleum fractions as carriers for one or more toxicants. As the present work has shown that the adult female is probably the most resistant sex and stage of the German cockroach, with the possible exception of nearly mature unhatched eggs within the capsule, any investigations on the value of

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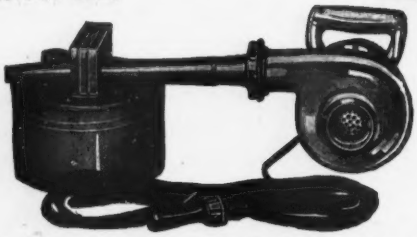

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new formulae, should include tests on these resistant stages.

Summary

1. A method is described for rearing large numbers of German cockroaches of known age.

2. A settling mist method is described for testing kerosene-base insecticides against the German cockroach.

3. Pyrethrum-oil sprays have a different effect on the housefly and German cockroach. Twenty-four hours after spraying, most houseflies have either died or recovered completely, whereas many cockroaches are left in a moribund condition at the end of the same period. Per cent of cockroaches dead at the end of 24 hours is not proportional to pyrethrin content, but per cent of dead plus moribund is proportional to pyrethrin content. Hence moribund roaches were considered dead in determining percent mortality.

4. On the basis of concentration by weight of toxicant in Deo-Base required to kill a given percentage of second instar nymphs, rotenone and pyrethrins were about equally toxic, whereas normal butyl carbitol thiocyanate was much less toxic, but possessed striking paralytic properties. There was no difficulty, however, in making a concentration of the thiocyanate that would give a high kill.

5. A 50-50 combination of rotenone and pyrethrins was not more toxic to second instar nymphs than an equivalent concentration of either alone.

6. Adult males were about 2½ and adult females about 4½ times as resistant to the Official Test Insecticide as were second instar nymphs.

7. Pyrethrum sprays cause female roaches to drop their egg capsules, some of which may hatch subsequently. Normal butyl carbitol thiocyanate produced the same effect to a lesser degree, whereas rotenone did not cause the females to drop their capsules.

Fly Control for Livestock

(*From Page* 93)

hibits a varying tolerance to pyrethrum as recent investigations reveal. According to test results by Simanton and Miller (39), young houseflies are killed with greater difficulty than older flies and female flies are about twice as resistant to sprays as male flies. Further data on other species of flies against which insecticide sprays are often used, is badly needed.

Combination Sprays

In contrast to those sprays of the kerosene-type base and of high killing potency is a class of pyrethrum-containing sprays that are fortified with pine oil, thiocyanate, citronella, nitrobenzene, and safrol that are intended to increase the repellent properties of the spray. Such sprays are sometimes termed "double-action" sprays due to their two-fold action of killing and repelling flies. According to Gnadinger "the better cattle sprays contain from 12 to 16 ounces of high test pyrethrum per gallon of spray . . . Five per cent of pine oil may be added to increase repellent action and to mask the odor of the base oil. Such a spray will kill and repel flies and can be used on the animals and also to kill flies in the barn, especially before milking time." He also adds what is now well known, that "If the base oil is too heavy, the killing power of the pyrethrum will be considerably reduced." A number of so-called "double-action" stock sprays have been tested by the writers upon *Musca domestica* according to the Peet-Grady Method and the results showed kills ranging from 7 to 31 per cent, while the "knockdowns" ranged from 40 to 93 per cent in 10 minutes. From the point of view of the average consumer who judges the efficiency of a cattle spray by the drop of flies, such sprays may or may not be satisfactory. Actually, however, not much of a kill can be expected.

Early investigations of derris and pyrethrum powders indicate that they have repellent properties. Graybill (16) says "pyrethrum powder when applied to the skin of cattle has a very marked repellent action, but this lasts only for about a day." Cory (11) and his associates, carrying on further investigations with derris and pyrethrum dust mixtures, drew the following conclusions:

"Impregnated dusts are generally superior to mixed dusts in the same series.

Stabilization does not significantly increase the value of the dusts.

Pyrethrum-impregnated dusts provide more protection per unit cost than do the derris-impregnated dusts, but the derris-impregnated dusts are more toxic per unit than are the pyrethrum-impregnated dusts.

Impregnated dusts gave better protection than the spray.

Pine oils add little to the efficiency of the impregnated dusts. They increase the initial toxicity rating of the materials but lower their efficiency over a three and one-half hour period."

For complete list of references see July, 1938, SOAP, pgs. 113-115.

Farm Market for Insecticides

(*From Page* 97)

The first project has enabled us during the past year to meet with insecticide dealers in 18 counties and enabled us to insure the stocking of insecticides which we recommend, in most stores handling insecticides in these 18 counties.

The second project is perhaps the most interesting and shows great promise. The purposes of this project are as follows:

1. To stress the importance of household insect control, not only from the standpoint of financial gain, but from the standpoint of sanitation and disease prevention as well.

2. To enable home makers to recognize the common household pests, their breeding habits and their damage as a basis for control operations.

3. To promote more efficient control of household pests through the proper selection and application of insecticides.

4. To show the value of precautions and preventive measures as

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Through this project, 2681 farm women were reached in 1937, the first year of its activity. In addition to our own department project on household insects, we have had the cooperation of one of the home economics specialists, who has given part of her time to household insect problems. Thus in 1937 she held meetings in four counties, instructing 120 local leaders who took the information back to 1615 women in their local clubs. Each year four or more additional counties will be added.

I cannot too strongly urge extension projects such as this in every state and from our own experience I can assure a great interest, insect control of high efficiency and an increase in the value of insecticide sales, not alone to your benefit but also to the benefit of the farm home.

The termite control project has been of benefit chiefly by acquainting the people with an understanding of termites and termite control and enabling them to avoid unqualified termite control operators.

Effect on Insecticide Sales. The question has been raised regarding the effect of our demonstrations and recommendations on insecticide sales. It is true we do recommend home made preparations when the formulae consist of simple and available ingredients, as for example, sodium fluoride for cockroaches. On the other hand where the formulae call for ingredients not readily obtainable as pyrethrum household sprays, we recommend ready prepared materials. Inasmuch as there are a large number of such sprays on the market and since the regulations permit a statement of 100 per cent active ingredients on the label regardless of the percentage of the real active ingredient pyrethrum, our only recommendations can be that the purchaser rely on the reputation of the manufacturer. Personally, I would like to have information on how we can better make recommendations. Again, personally, I believe the manufacturer would be aiding his own cause if he gave the actual active ingredients and depended on his brand name to promote sales rather than some so-called mysterious formula.

What Should the Manufacturers do to Increase Sales? Perhaps at last we are getting down to brass tacks. I have over-run my time I am sure so I will hastily give you my ideas.

1. Recognize the value of extension work and cooperate with station and extension service. Use your influence to extend its service.

2. Special effort should be made to contact the farm people. How? By publicity and advertisement in farm journals. Many farm folk do not realize that effective insecticides are available.

3. Use the methods of the Better Business Bureau and issue a booklet which will not be biased and will show the merits of all of your products.

4. Timely window displays, correspondence, advertising and the like should be sponsored by manufacturers by furnishing dealers with material needed.

5. Sale of insecticides is greatly limited because appliances are not generally available. Therefore, manufacturers of insecticides should cooperate with appliance manufacturers to insure proper display and adequate availability of such appliances.

6. Recognize the value of farm sanitation in the control of such insects as the housefly and not make exaggerated claims for sprays alone.

——♦——

Wax Polishes

(*From Page* 101)

above 90° C. or the waxes will darken in color. Now add the molten wax to the boiling soap solution and stir vigorously until an even dispersion of the wax results. Then stir gently, but continuously, until the emulsion has cooled to room temperature.

Water-Resistant Characteristics

The water resistance of polish films may be shown qualitatively by the extent of the spotting or disintegrating action of water on prolonged contact. An excellent quantitative technic seems to lie in the measurement of water repellency of the film at the time of initial contact. The procedure consists in measuring the contact angles between the surface of the water and the solid-liquid interface by the tilting plate method (2). Zero angle of contact indicates complete wetting of the solid; a completely water-repellent surface would have a contact angle of 180°. The water resistance of films produced by the drying of emulsions made with morpholine soaps is evidenced by their having contact angles as great as 80°, compared to 20° to 30° for polishes made from non-volatile emulsifiers. The degree of moisture impermeability of the polish films is also important. This property is determined by measuring the water-vapor transmission rates of wax film coatings laid down on thin, dense paper. The results of such tests demonstrate that the wax films prepared with morpholine soaps have 50 to 65 per cent lower transmission rates than films made with fixed soaps.

As in the case when any volatile organic solvent is used, adequate ventilation should be provided when morpholine polishes are manufactured. This is especially true during that part of the manufacturing step in which the polish is warm, and hence the concentration of morpholine vapor in the air is increased correspondingly.

References

(1) Wilson, A. L., *Ind. Eng. Chem.*, *27*, 870 (1935).

(2) Wenzel, R. N., *Ibid.*, *28*, 988 (1936).

——♦——

Metal Polish

A liquid metal polish may be made as follows: Dissolve 8 parts of fatty acids in 15 parts of denatured alcohol, saponify with 4 parts of ammonia (sp. gr. 0.91), add 2 parts of fatty alcohol sulfates, dissolve in 58 parts of benzine and stir the solution with 50 parts of fine Neuburger chalk. *Seifensieder-Ztg.* **65**, 397, (1938).

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News.....

Grant Cube Insecticide Licenses

Following confirmation of the validity of the Dennis Patent, covering the use of cube as an insecticide, which was upheld recently in the Milwaukee courts, American Cube Syndicate, Milwaukee, has issued licenses covering the insecticidal use of cube to the following firms: R. J. Prentiss & Co., New York; John Powell & Co., New York; Hammond Paint & Chemical Co., Beacon, N. Y.; and Derris, Inc., New York. The latter license also covers use of cube by McCormick & Co., Baltimore, and Dodwell & Co., Ltd., New York. The concerns licensed are reported to have settled with the patent holders for past infringement and to have agreed to a royalty basis on future sales.

Automobile Polish Usage Up

The Chemical Specialties Division of E. I. duPont de Nemours & Co., Wilmington, has recently completed a survey, statistics for which were gathered coincident with a United States Census Bureau survey, disclosing that the use of liquid automotive polishes rose from 26 gallons per 1000 cars in 1932 to approximately 45 gallons in 1937. The survey also indicated that 75 per cent of all cars are waxed or polished at least once every six months, and that 66 per cent are polished by the owner himself. Other facts brought out were that 84 per cent of those who polish their own cars bought the polish or wax themselves, and that 80 per cent specified a brand name.

New Powell St. Louis Office

John Powell & Co., New York, have announced the establishment of a new branch office at St. Louis under the management of D. W. Lynch. Mr. Lynch has been for the past several years associated with the Chicago office of the Powell firm. The new St. Louis office is located in the Chemical Building, 721 Olive St. The territory to be covered from St. Louis will include most of the South and Southwest, and parts of the middle-

D. W. Lynch

west including Cincinnati and southwest Ohio, the southern half of Indiana and Illinois, Missouri and adjacent states. Mr. Lynch is well-known in the insecticide field and has been active in the N.A.I.D.M.

Imperial Prods. to Expand

Imperial Products Co., manufacturer of polishes, cleansers and insecticides, Philadelphia, announces that it has just been awarded a contract by the U. S. Post Office Department, at Washington, to supply all of the scouring powder and metal polish required by the Department for the next 12 months. As a result, the company will expand its manufacturing facilities. It also has contracts with New York City, and the states of Virginia, North Carolina, Maryland, and Pennsylvania. Imperial Products has been in business in Philadelphia for 48 years.

Plowfield Forms Puritan Labs.

Puritan Laboratories, Ltd., Toronto and Montreal, has been formed by W. F. Plowfield, former regional manager of eastern Canada for West Disinfecting Co., L. I. City, N. Y. Associated with Mr. Plowfield, who will serve as president of the new company, are the following: A. I. Wismer, vice president; Mrs. R. J. Newman, secretary-treasurer; A. M. Harwood, comptroller; Frank Collins, D. R. W. Gedge, J. C. Kane, W. S. Lindsay, Alexander Roy, and James Bennett, members of the sales staff. In addition to carrying a complete line of sanitary chemicals and supplies for distribution, Puritan Laboratories will represent Vestal Chemical Co., St. Louis, on its line of hospital soap dispensers, and Carter Sanitary Supply Co., Cincinnati on its line of deodorizing devices. A warehouse and office space will also be established at Vancouver, B. C., and buying offices at Niagara Falls, N. Y.

Promote "CSO" in Drive

CSO Laboratories, manufacturer of "CSO" germicide, Dallas, Tex., has launched a state-wide merchandising and advertising campaign in Oklahoma. More than 1,000,000 samples of the product are expected to be distributed through retail druggists. The consumer sampling campaign is backed by newspaper and radio advertising.

Prentiss Names Bevernick

R. A. Bevernick, of R. J. Prentiss & Co., New York, is now in charge of the firm's insecticide division. He succeeds Russell B. Stoddard, who recently joined Terra Chemical Corp., New York. Mr. Bevernick has been in charge of installation of the new Prentiss pyrethrum concentrate plant in Brooklyn, recently completed. He has been with the firm since July, 1937, and is a graduate of the U. S. Naval Academy, at Annapolis, class of 1937.

Virus in Termite Control

The National Pest Control Association reports that requests have recently been received by the Bureau of Entomology and Plant Quarantine at Washington, for information regarding a virus, which it had been alleged, would kill termites on a large scale. From all information which the Bureau has been able to obtain, the National Pest Control Association states, there is no virus known which is capable of being used in this way.

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The diagram shows poorly atomized spray, notice the wasted blind spots—and compare with solid atomized mist in NU-ACTION sprayers!

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Buckingham

AS we reach the second anniversary of Buckingham (we have more than 25 years experience in making waxes) we want to take this opportunity to thank our many friends who have helped us to increase our volume of business 100% over the course of the past year. We will continue to build on the basis of a uniform line of quality products.

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Pyrethrum Imports Decline

The imports into the United States of crude pyrethrum flowers declined during the first 4 months of 1938 to 6,655,246 pounds from 10,061,378 pounds in the corresponding period of 1937. A feature of the early 1938 trade was the entry of Brazil on the American market as an important supplier. The first entry of Brazilian pyrethrum was reported in 1934, when 4,480 pounds were received. In the first four months of 1938 a total of 230,919 pounds was entered from Brazil.

Insecticides at Leipzig Fair

The number of insecticides offered at the Leipzig Sample Fair, Germany, for the past several seasons has been comparatively large, it is reported, and with business fairly good, especially in fly-catchers and household preparations. A novelty in this line offered recently was an insect catcher, the brims of which were made luminous through application of a solution containing phosphorus, so that insects were attracted at night. It was recommended for use in tents, recreation spots and other outside places.

Murray Joins MGK

Christopher A. Murray, entomologist, formerly with Baldwin Laboratories, Saegertown, Pa., has joined the research staff of McLaughlin, Gormley, King Co., Minneapolis.

Lehn & Fink Net Lower

Lehn & Fink Products Corp., Bloomfield, N. J., reports a net profit of $154,796, equal to 38 cents a share, for the six months ended June 30. This compares with a net of $238,130, or 59 cents a share, in the same period in 1937.

Announce Drug Act Rules

Regulations for the administration and enforcement of those provisions of the recently enacted Federal Food, Drug and Cosmetic Act which became effective immediately upon its approval on June 25, 1938, have been announced by the U. S. Department of Agriculture. In announcing the regulations, department officials said they welcomed constructive suggestions. On the basis of such suggestions, proposed revisions will be announced and dates and places for public hearings will be fixed. M. L. Wilson, acting Secretary of Agriculture, Washington, is in charge of formulating the regulations.

COMING!

A long-range view of the pyrethrum situation in Japan and in the world consuming markets . . . a discussion based on a first-hand investigation of the situation in the producing regions of Japan . . . the pyrethrum outlook . . . in the September issue of SOAP.

Breuer Holds Open House

Breuer Electric Mfg. Co., electric insecticide sprayers, Chicago, officially opened its new plant on the north side of Chicago on Saturday afternoon, July 16, with an open house reception. Between 250 and 300 guests attended. Adam A. Breuer, president of the firm, conducted his visitors on an inspection trip through the new factory.

Issues Poison Sale Rules

Regulations covering the sale, packaging and labeling of insecticides, fungicides, animal dips, poison baits and other articles containing poison, have recently been issued by the government of South Australia. In general, the regulations provide that poisons may be sold only by wholesalers and retailers licensed by the state government and handled and dispensed only by approved technicians; and that they must be conspicuously labeled with a warning, together with antidotes, names and amounts of ingredients, and name and address of distributor. Insecticides must be distinctively colored.

Lehn & Fink Names Philpott

Douglas Philpott, former advertising manager, Lehn & Fink, Ltd., Toronto, has been named managing director.

Davis Attends Coast Meeting

Prof. J. J. Davis, Purdue University, Lafayette, Ind., stopped off in Omaha, Nebr., for a brief visit with members of the Omaha Pest Control Association last month, while on his way to attend the Pacific Slope Branch meeting of the American Association of Economic Entomologists, of which he is president. Prof. Davis also visited briefly with members of both the Los Angeles and San Diego Pest Control Associations while on the Coast. From the Coast he journeyed to Ottawa for the midsummer meeting of the American Association of Economic Entomologists.

Termite Case Disallowed

The disability compensation recently claimed by a building superintendent of Long Island City, N. Y., on the grounds that he had been bitten by a termite so severely during the course of his work that he was forced to enter a hospital for treatment, has been disallowed by the N. Y. State Industrial Board. According to the referee, the case was disallowed because the evidence did not "satisfactorily establish causal relationship between the alleged insect bite and the disability in question."

Lambert Earnings Lower

Lambert Co., St. Louis, reports a net profit for the six months ended June 30 of $613,326, or 82 cents a capital share. This compares with a net income of $652,061, or 87 cents a share for the same period in 1937.

Frank M. Bauer Dies

Frank M. Bauer, 62, president of Pfaltz & Bauer, Inc., chemical importing firm, New York, died last month. Mr. Bauer entered business in 1900 with Henry Pfaltz, forming the firm of Pfaltz & Bauer, Inc., importers of chemicals, scientific instruments and laboratory apparatus. Mr. Bauer was active in industrial and civic affairs, and was a member of the New York Board of Trade, Drug & Chemical Club, and a number of other clubs.

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N.P.C.A. to Meet in Omaha

The National Pest Control Association will hold its annual convention at Omaha, Nebr., Oct. 24 to 26. While complete details of the program are not yet available, William O. Buettner, secretary of the association, has advised that the list of speakers will include the following: Dr. C. L. Williams, Assistant Surgeon General of the U. S. Public Health Service, who will deliver an address on "Fumigation"; Dr. Thomas E. Snyder, senior entomologist, Bureau of Entomology, U. S. Department of Agriculture, who will read a paper on "Latest Progress in Research in Termite Control During 1938"; Dr. H. E. Whitmire, St. Louis, who will speak on "Pyrethrum, Derris, Rotenone and Other Plant Poisons"; Dr. Rodman M. Brown, building engineer, Omaha, who will discuss pest control in public buildings; Dr. A. E. Back, senior entomologist, Bureau of Entomology, U. S. Department of Agriculture, who will participate in a discussion on moths and carpet beetles. In addition, there will be papers on general problems by other entomologists, and exhibits by manufacturers and supply houses.

Chemical Supply in 40th Year

Chemical Supply Co., Cleveland, manufacturer of insecticides, disinfectants, polishes, waxes, and other sanitary products, recently marked the 40th anniversary of its founding. In celebration of the occasion, employees of the firm presented J. W. Ellis, founder and president, with an oil painting of the factory buildings by a well-known Cleveland artist. Chemical Supply Co. was founded in 1897 by Mr. Ellis, then a young man just graduated from Northwestern University. He started the business in Chicago, specializing in selling disinfectants and insecticides. In 1898 Mr. Ellis decided to move his business to Cleveland and manufacture for the jobbing trade only. This has been the company's policy ever since.

In search of manufacturing facilities which would provide for a steady expansion of the company's business, Mr. Ellis purchased the present factory, located at 2450 Canal Road, in the downtown Flats

Henry A. Nelson

district of Cleveland, in 1918. In 1924, he relinquished the active management of the firm to Henry A. Nelson, vice president and general manager, who has been with the business since 1919. Mr. Nelson is well-known in the industry, and is a member of the present board of governors of the National Association of Insecticide and Disinfectant Manufacturers. J. M. Williams is secretary and treasurer of the company.

Koppers Issues Yearbook

Koppers Co., Pittsburgh, has just issued a book with the title, "Koppers Yearbook — 1938," which describes the growth of the company, and lists the various industrial products which it manufactures, with details concerning each. The book also describes the company's responsibilities as a taxpayer, employer, and trustee for its stockholders.

FLOOR SEALERS

The origin, uses, composition and manufacture of these relatively new floor treatment products in the field of sanitary specialties . . . where, when, and how used, and their variations in composition . . . an article by Dr. C. A. Tyler which will appear in an early issue of SOAP.

Propose Drug Act for N. Y.

A bill aimed at controlling the quality of food, drug and cosmetic products by exacting a registration fee of $25 the first year and $10 each year thereafter for every food, drug and cosmetic product manufactured in New York City was proposed by the City Council last month. The bill calls for the establishment of a Consumers' Bureau in the city's Department of Health through which each product must be submitted for registration, together with a complete qualitative and quantitative disclosure of its contents. The registration fees are said to be required in order to finance the work of the Bureau.

A similar bill for New York City was proposed in June, 1935, at which time Mayor F. H. LaGuardia stated that he would withhold consideration of the measure providing food, drug and cosmetic industries would cooperate with federal agencies in securing the passage of a federal control bill. He said that in his opinion a strong federal act would make the local law unnecessary. Since then a new Federal Food, Drug and Cosmetic Act has been signed by the President and went into effect on June 25. While general provisions of the law do not become effective until June 25, 1939, certain other of its provisions, those concerned chiefly with that which the New York bill would regulate, namely, prohibitions against dangerous drugs, the introduction of new drugs before they have been tested, and prohibitions against dangerous cosmetics, became effective immediately.

The proposed regulations have met with much opposition and a request has been made for a public hearing on the bill before the Committee of Public Welfare. Although the bill will not be considered until early fall, members of the food, drug and cosmetic industries have been urged to give it their consideration, and to prepare their views well in advance of that date.

James Irwin, former director of public relations of General Motors Corp. units in Dayton, O., has joined Monsanto Chemical Co., St. Louis.

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Corl Leaves Penick

C. S. Corl, for the past year chemist in charge of production at the plant of S. B. Penick & Co., at Lyndhurst, N. J., is no longer with the Penick Company, having left them July 15. Mr. Corl has not announced any plans for the future.

Article on Athlete's Foot

Dr. George F. Reddish and Ella Burlingame, both of Lambert Pharmacal Co., St. Louis, are the authors of a paper on "Athlete's Foot" delivered before a recent meeting of the American Proprietary Association, which states that the common practice of using only a single test organism in determining the fungicidal properties of remedies for "Athlete's Foot" probably explains why a preparation may be effective in one case and not in another. The authors declare it should be recognized that four,—not one, — fungi cause most cases of "Athlete's Foot," and even though all of these may not be present in a given infection, any yardstick for evaluating preparations should include tests against each organism.

The investigators list the four varieties of epidermophytosis in the following order: epidermophyton interdigitale, epidermophyton rubrum, epidermophyton gypseum, and trichophyton rosaceum. In a new test, which it is pointed out, includes the factor of penetration, each organism is streaked over the surface of Sabourand's agar in a 9 cm. Petri dish, using a dry sterile cotton swab inoculated with a five-day culture of these organisms. Since, they explain, the organisms cannot usually be isolated in a pure culture from the blister fluid, the top of the blister must be cut away and the ceiling side applied to the surface of the agar when preparing cultures.

After incubation for five days, the agar cultures are cut into 1 cm. squares over which the fungicide to be tested is poured so as to flood the plates entirely. At periods of 5, 15 and 30 minutes one of the squares of culture and agar from each plate is removed and placed in 10 cc. of sterile broth.

Excess fungicide is washed out of the matted culture by shaking the tube lightly for five minutes. After this, the block of culture is removed from the broth and spread with the culture side down over the surface of a sterile plate of Sabourand's agar. These plates are incubated at room temperatures for three weeks and observed for growth.

WHAT VALUE FLOOR WAX?

The first publication of methods designed for determining the practical value of water emulsion floor waxes . . . effects of composition variations on water resistance, wear, gloss, and other features . . . this discussion by Charles S. Glickman will be published in an early issue of SOAP.

Experience has shown that fungicides which kill the test organisms in five minutes by this test are effective in the treatment of "Athlete's Foot" as determined by clinical test, Dr. Reddish and Miss Burlingame state.

Chemical Salesmen Golf

The Chemical Salesmen's Association, New York, held the second in its series of golf tournaments at the Garden City Country Club, Garden City, Long Island, N. Y., on July 12. Winners in the class A division were Frank Green, National Aniline & Chemical Co.; Victor Williams, Monsanto Chemical Co.; and Henry Hermann, General Dyestuffs Corp. Class B winners were George Bode, R. & H. Chemicals Division, E. I. duPont de Nemours & Co.; Ralph E. Dorland, Dow Chemical Co.; and Edward Scheullein. A third tournament will be held at Green Meadows Country Club, Harrison, N. J., Aug. 16.

Solvay Moves St. Louis Office

Solvay Sales Corp. has moved its St. Louis offices to a new air-conditioned office building at 3615 Olive St.

Editor's Correspondence

Soap Magazine

Gentlemen:

Disinfectant manufacturers have long had merchandising problems just like other industries, but up to this point very little seems to have been done about solving them. We go on year after year offering the same type and strength of disinfectants to various supply houses, and they in turn to the actual users, —without bothering to investigate the needs of the consumer or attempting to give him the assistance he very obviously needs.

If manufacturers were to attempt to ascertain what type of disinfectant the consumer would like, it is true to attempt to manufacture some of the disinfectants requested would be out of the question, but if you succeed in getting one good idea this would be a great step forward. The disinfectant industry has many highly trained chemists and bacteriologists constantly experimenting with new types of disinfectant, but even after these have been discovered the manufacturer is not sure of what the public wants. Why not find out first, then turn those particular requests over to our technical staffs?

It is true that the general public is not acquainted with the true meaning of "phenol coefficient"; but, whose fault is that? To enlighten disinfectant users as the meaning of such terms will be a gigantic task; any worthwhile result requires hard work, and the sooner the manufacturers start to bring this about the better off the industry as a whole will be. It will have to be done sooner or later, why not now?

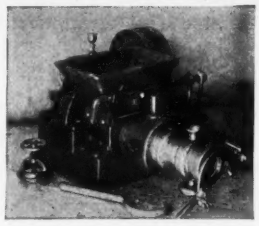
Gordon Baird
Baird & McGuire, Inc.
Holbrook, Mass.

Develops New Uses for "Gunk"

Curran Corp., Malden, Mass., manufacturer of "Gunk," self-emulsifying, degreasing solvent for washing the chassis and outside of automobile motors, announces the development of two new uses for its product. The company's research department has

LABORATORY MILL AND PLODDER

Showing a very successful laboratory mill and plodder capable of producing a very nice-looking cake of soap weighing 2½ oz., measuring 3¾" long, 1⅝" wide and 1" thick. The mill is equipped with Quincy Granite rolls 4½" in diameter, 12" long. The plodder has a 3¼" diameter screw and is equipped with a cutting-off device and has an electric heating element to heat the water contained in the cup.



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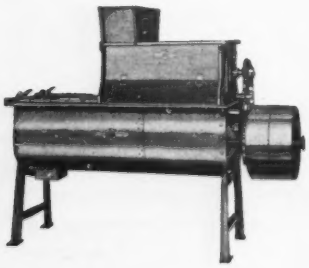


Sweeping Compounds — Deodorant Crystals — Insecticides —

This small Sprout-Waldron power mixer meets requirements perfectly. It is furnished with or without sifter attachment. Sizes range from 2½ to 15 cubic feet, with ¾ to 3 horsepower requirements.

Write for Catalog

SPROUT, WALDRON & COMPANY

Dept. 3 **Muncy, Pa.**

developed a "Gunk" compound known as "Motor Fizik" for washing the inside of a motor block or engine having tarry deposits. It is described as a vapor-phase solvent oil, which is to be introduced into the hot combustion chambers of the automobile engine while the motor is running. Enough of the compound is to be used so as to "drown out" the engine. Condensation of the solvent is said to take place as the engine cools to the dew point, and the tarry carbon and sludge deposits will soften and dissolve from the internal operating mechanisms. The manufacturers recommend that the compound be used just before an oil change so that the dissolved tars may be removed in solution with the change of old motor oil.

The other use for "Gunk," according to the company's research department, is as a degreasing and washing agent for carburetors and fuel pumps during the re-building process. The product is said to dissolve the grease and oil accumulations, at the same time exert a safe detergent effect on zinc and die metal parts. The cleaning process is one of cold immersion, followed by a cold water rinse.

—— ♦ ——

M. M. & R. New Chicago Office

Magnus, Mabee & Reynard, Inc., New York essential oil house, announce the removal of their Chicago office to new and larger quarters in the Great Lakes Building 180 North Wacker Drive. The move is in line with company plans to enlarge their Chicago branch, and to enlarge the territory which it serves. The sales staff was recently increased by the addition of several more men. Talmadge B. Tribble, who joined the company several months ago, is in charge of the branch. The new Chicago office marks the second step in a program of expansion begun last May when Magnus, Mabee & Reynard moved into their New York plant at 16 Desbrosses St.

—— ♦ ——

Stocks of crude cottonseed oil on hand in the United States as of June 30, 1938, totaled 46,761,441 pounds.

Trade Mark Applications

(*From Page* 49)

M.B.META-BRITE — This in solid letters describing cleaning compound. Filed by Meyer-Blanke Co., St. Louis, March 12, 1938. Claims use since March 3, 1938.

PERMA SHEEN—This in solid letters describing aluminum polishing compound. No claim is made to the word "Sheen" apart from the mark. Filed by Perma Sheen Laboratories, Chicago, April 11, 1938. Claims use since Jan. 28, 1938.

VA-DU—This in solid letters describing antiseptic. Filed by Pynosol Laboratories, Inc., Chicago, March 29, 1937. Claims use since May 16, 1933.

"SUPER SOL"—This in solid letters describing sterilizing detergent. Filed by H. G. Jarvis, Portland, Ore., Oct. 18, 1937. Claims use since July, 1931.

FO-EEN X—This in solid letters describing germicide. Filed by F. Freithofer Mfg. Co., Pittsburgh, April 14, 1938. Claims use since March 15, 1938.

LULU—This in solid letters describing shampoo. Filed by Lulu Products, New York, May 26, 1938. Claims use since April 6, 1938.

HIGH LUSTER POLISH—This in solid letters with drawing of figure of old man stirring a kettle over a fire, describing furniture polish. The words "High Luster Polish" are disclaimed apart from the mark. Filed by Wonder Products Co., Salt Lake City, Utah, May 13, 1937. Claims use since April 15, 1936.

—— ♦ ——

Trade Marks Granted

357,899. Shaving Cream. Paul Bunyan, Inc., St. Paul. Filed March 18, 1937. Serial No. 390,294. Published April 5, 1938. Class 4.

357,909. Cleaners. H. G. Valentine Co., Randolph, Mass. Filed Aug. 26, 1937. Serial No. 396,793. Published Dec. 28, 1937. Class 4.

357,911. Soap Powder. Central Soap Co., St. Paul. Filed Sept. 1, 1937. Serial No. 396,978. Published Oct. 26, 1937. Class 4.

357,912. Animal Soap. Geo. W. Clayton Co., Chicago. Filed Sept. 22, 1937. Serial No. 397,645. Published March 8, 1938. Class 4.

357,917. Soap Flakes. Aime Distributing Co., New York. Filed Oct. 7, 1937. Serial No. 398,234. Published April 5, 1938. Class 4.

357,935. Cleanser. Sno-White Mfg. Co., Monongahela, Pa. Filed Dec. 3, 1937. Serial No. 400,440. Published April 5, 1938. Class 4.

357,953. Shoe White. Baldwin Laboratories, Inc., Saegertown, Pa. Filed Jan. 8, 1938. Serial No. 401,686. Published April 5, 1938. Class 4.

357,955. Furniture Polish. Oil Specialties & Refining Co., New York. Filed Jan. 8, 1938. Serial No. 401,699. Published April 12, 1938. Class 16.

357,956. Floor Wax. Oil Specialties & Refining Co., New York. Filed Jan. 8, 1938. Serial No. 401,701. Published April 12, 1938. Class 16.

357,964. Soap. Medallion Cosmetic Co., New York. Filed Jan. 24, 1938. Serial No. 402,284. Published April 5, 1938. Class 4.

357,975. Shoe Polish. Michal Sienkiewicz, New York. Filed Feb. 1, 1938. Serial No. 402,576. Published April 12, 1938. Class 4.

357,979. Glass Cleaner. Midway Chemical Co., Jersey City, N. J. Filed Feb. 5, 1938. Serial No. 402,736. Published April 5, 1938. Class 4.

358,024. Detergents. Speare Supply Co., Chicago. Filed July 20, 1936. Serial No. 381.234. Published Sept. 7, 1937. Class 4.

358,025. Detergents. General Chemical Co., New York. Filed Oct. 30, 1936. Serial No. 384,960. Published Jan. 5, 1937. Class 4.

358,037. Shaving Soap. Castilian Products Corp., Los Angeles. Filed May 3, 1937. Serial No. 392,196. Published April 19, 1938. Class 4.

358,045. Moth Repellent. Moth-O-Rize Co., Chicago. Filed June 18, 1937. Serial No. 394,242. Published March 8, 1938. Class 6.

358,046. Moth Repellent. Moth-O-Rize Co., Chicago. Filed June 18, 1937. Serial No. 394,243. Published March 8, 1938. Class 6.

LIQUIDATING

MACHINERY AND EQUIPMENT

J. T. ROBERTSON CO. SYRACUSE, N. Y.

ATTENTION SOAP & SANITARY PRODUCTS MANUFACTURERS!

This is one of the finest soap plants we have ever liquidated. The machinery and equipment is all of recent design and in excellent condition. Don't miss this opportunity to fill your soap machinery requirements at a small fraction of the usual cost.

Outstanding Bargains from Robertson Plant

Wurster & Sanger Complete Double Effect Glycerin Evaporator

J. M. Lehmann 5 Roll Water Cooled 16" x 40" Steel Polishing Mill

Proctor & Schwartz Soap Chip Dryer 48" Single Roll

Proctor & Schwartz Soap Chip Dryer 36" Single Roll

Proctor & Schwartz Soap Chip Dryer 5 Cooling and Crushing Rolls

3 Jones Automatic Soap Presses

Ferguson & Haas Automatic Wrapping Machine

3 Blanchard No. 14 Soap Powder Mills

2 Shriver Filter Presses 30" x 30" 42 Plates

Pneumatic Scale Corp. Automatic Can Filler

2 Pneumatic Scale Corp. Automatic Filling and Weighing Machines with Top and Bottom Sealers for Filling Soap Chips and Powders into Packages

3 H-A Automatic Cutting Tables

2 H-A Automatic Slabbers

2 H-A Jumbo 10" Plodders

2 H-A Preliminary 8" Plodders

2 H-A Amalgamators

8 H-A Crutchers

6 H-A 4 Roll Granite Toilet Soap Mills

2 Dopp Crutchers

200 Soap Frames

3 Bliss Sealers

Also Kettles, Tanks, Machine Shop Equipment, Barrel Fillers, Pumps, Motors, Etc.

We invite your inspection and inquiries. All machinery and equipment is priced for immediate sale.

NEWMAN TALLOW & SOAP MACHINERY CO.

1051 W. 35th ST., CHICAGO, ILLINOIS

OUR FORTY YEARS SOAP EXPERIENCE CAN HELP SOLVE YOUR PROBLEMS

Classified Advertising

Classified Advertising—All classified advertisements will be charged for at the rate of ten cents per word, $2.00 minimum, except those of individuals seeking employment where the rate is five cents per word, $1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of *Soap*, 254 West 31st St., New York.

Positions Wanted

Soapmaker — perfumer, chemist — long experienced in profitable laundry and toilet soap manufacture. Salary reasonable. Address Box No. 432, care *Soap*.

Chemist and Perfumer: Man with 10 years' experience in sales and plant, cosmetics, sanitary supplies and perfuming raw materials, desires to make new connection. Address Box No. 440, care *Soap*.

European manufacturer of many years experience now in United States; offers services and formulae for making moth preventives in powder and liquid form, furniture polish and waxes, floor wax; also expert in cleaning processes suitable furniture or clothes. Address Box No. 443, care *Soap*.

Expeller Operator—Position wanted with expeller processing plant. Experienced with the installation, operation and maintenance of Anderson expellers. Knowledge of complete operation of a pyrethrum extract processing plant. Address Box No. 437, care *Soap*.

Salesman—who has a large following in restaurants, cafeterias, hotels, clubs, etc., in New York City and vicinity, desires position with oil and fat renderer who has facilities for big business. Will also consider financial investment. Address Box No. 438, care *Soap*.

Insecticide Chemist—With ten years' experience in manufacture and testing household and agricultural insecticides, and other household specialties, desires to make new connection where his experience will be of value. Completely familiar insecticide chemistry, and money-saving methods of manufacture. For further details, address Box No. 433, care *Soap*.

Superintendent and Manager—Man with 30 years' experience directing business manufacturing and selling industrial and textile soaps and specialties, is available for new connection. For further details, address Box No. 434, care *Soap*.

Chemist, ten years in soap, soap specialties, waxes, etc.; Raw material, control, production and research. Know soap game A to Z. Address Box No. 442, care *Soap*.

Iloilo, Karachi, Mombassa, and Guayaquil

Not a proof reader's nightmare, but actual places where CONSOLIDATED'S Guaranteed Good Rebuilt Soap Machinery is giving satisfactory service. Join the world-wide ranks of pleased customers!

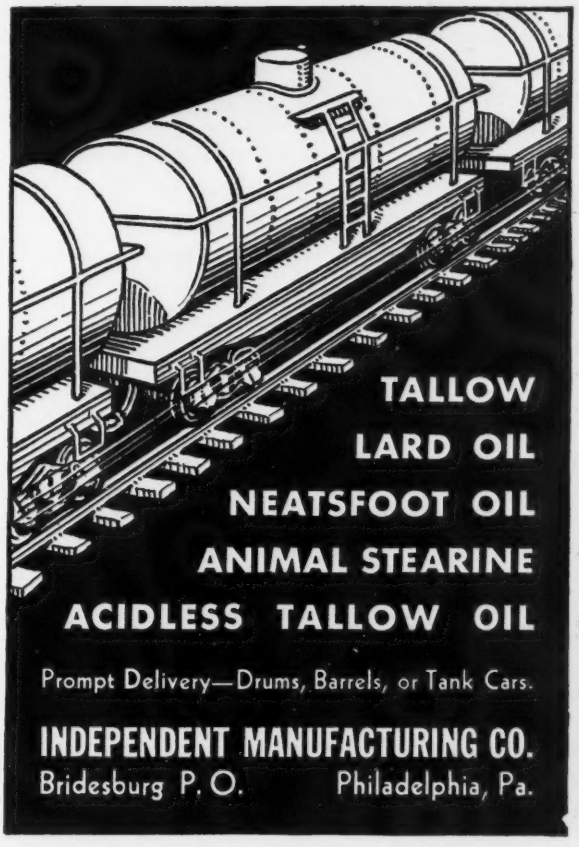
Crutchers	Pulverizers
Soap Kettles	Soap Pumps
Powder Mixers	Soap Chippers
Granite Mills	Filter Presses
Plodders	Soap Frames
Slabbers	Powder Fillers
Foot and Automatic Soap Presses	Labellers
	Tanks
Cutting Tables	Boilers

Selected Specials

1—Proctor & Schwartz Soap Chip Dryer, steel frame, 72″ Apron, with 5-roll P. & S. Mill.
2—Blanchard No. 10 Soap Powder Mills.
4—Steel Wool Mfg. Machines, complete.
3—Automatic Soap Wrapping Machines, electric glue sealers, adjustable.
1—Jones automatic Soap Press.
2—Pneumatic Scale Carton Packaging Units.
10—Rotex Sifters, 20″x48″ screens, single deck.

Send for Illustrated Soap Bulletin

CONSOLIDATED PRODUCTS CO., INC.
15-21 PARK ROW NEW YORK, N. Y.
BArclay 7-0600 Cable Address: Equipment
We buy your idle Machinery—Send us a list.



Raw Materials and Equipment

NOTE: This is a classified list of the companies which advertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index to Advertisements, on page 128 for page numbers. *"Say you saw it in SOAP."*

ALKALIES

John A. Chew, Inc.
Columbia Alkali Co.
T. G. Cooper & Co.
Dow Chemical Co.
Eastern Industries
Hooker Electrochemical Co.
Innis, Speiden & Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.
Warner Chemical Co.
Welch, Holme & Clark Co.

AROMATIC CHEMICALS

American-British Chemical Supplies
Aromatic Products, Inc.
Compagnie Parento
Dodge & Olcott Co.
Dow Chemical Co.
P. R. Dreyer Inc.
E. I. du Pont de Nemours & Co.
Felton Chemical Co.
Firmenich & Co.
Fritzsche Brothers, Inc.
General Drug Co.
Givaudan-Delawanna, Inc.
Magnus, Mabee & Reynard, Inc.
Monsanto Chemical Co.
Norda Essential Oil & Chemical Co.
Orbis Products Corp.
Schimmel & Co.
Solvay Sales Corp.
Ungerer & Co.
Van Ameringen-Haebler, Inc.

BULK AND PRIVATE BRAND PRODUCTS

Associated Chemists, Inc.
Baird & McGuire, Inc.
Buckingham Wax Corp.
Candy & Co.
Chemical Supply Co.
Clifton Chemical Co.
Davies-Young Soap Co.
Federal Varnish Co.
Fuld Bros.
Harley Soap Co.
Koppers Co.
Kranich Soap Co.
Philadelphia Quartz Co.
John Powell & Co.
Geo. A. Schmidt & Co.
Shawmut Specialty Co.
Sweeping Compound Mnfrs. of N. Y.
Uncle Sam Chemical Co.
T. F. Washburn Co.
White Tar Co.
Windsor Wax Co.

CHEMICALS

American-British Chemical Supplies
John A. Chew, Inc.
Columbia Alkali Co.
T. G. Cooper & Co.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Eastern Industries
Hooker Electrochemical Co.
Industrial Chemical Sales Div.
Innis, Speiden & Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Philadelphia Quartz Co.
Rohm & Haas Co.
E. M. Sergeant Pulp & Chem. Co.
Solvay Sales Corp.
Standard Silicate Co.
Jos. Turner & Co.
Victor Chemical Works
Warner Chemical Co.
Welch, Holme & Clark Co.

COAL TAR RAW MATERIALS

(Cresylic Acid, Tar Acid Oil, etc.)

American-British Chemical Supplies
Baird & McGuire, Inc.
T. G. Cooper & Co.
Innis, Speiden & Co.
Koppers Co.
Monsanto Chemical Co.
Reilly Tar & Chemical Co.
White Tar Co.

COLORS

Fezandie & Sperrle
Pylam Products Co.

CONTAINERS and CLOSURES

American Can Co. (Tin Cans and Steel Pails)
Anchor-Hocking Glass Corp. (Closures & Bottles)
Continental Can Co. (Tin Cans)
Hazel-Atlas Glass Co. (Bottles and Jars)
National Can Co. (Cans)
Sutherland Paper Co. (Packages)
Wilson & Bennett Mfg. Co. (Steel Pails and Drums)

DEODORIZING BLOCK HOLDERS

Clifton Chemical Co.
Fuld Bros.

ESSENTIAL OILS

Aromatic Products, Inc.
Compagnie Parento
Dodge & Olcott Co.
P. R. Dreyer Inc.
Felton Chemical Co.
Firmenich & Co.
Fritzsche Brothers, Inc.
Leghorn Trading Co.
Magnus, Mabee & Reynard, Inc.
Norda Essential Oil & Chemical Co.
Orbis Products Corp.
Schimmel & Co.
Ungerer & Co.
Van Ameringen-Haebler, Inc.

INSECTICIDES, SYNTHETIC

Kessler Chemical Co.
Rohm & Haas Co.

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Oil and Fat Refining: Chemist Ph.D., with a number of years experience in oil and fat refining and the manufacture of toilet and laundry soaps with leading firms, is open for part-time connection. Prefer location in East. Willing to consider moderate salary with right firm. Chance to secure part of expert's time at low cost. Address Box No. 435, care *Soap.*

Entomologist—Eastern Univ. '36. Knowledge of farm crop insecticides; ten years' truck farming experience; two years' experience in extermination processes. Address Box No. 445, care *Soap.*

Positions Open

Position Open—Man over 45 for direction and control of manufacturing of white olive oil soap with full experience on this particular item. Address Box No. 444, care *Soap.*

Miscellaneous

Sense Appeal—Texol Self-Polishing Wax is a waxier wax embodying rich luster and an appealing, refreshing odor. All No. 1 Carnauba wax-content. Inquiries invited. Texol Chemical Works, Clinton, Massachusetts.

For Sale: Medium size soap plant with buildings and machinery. Located on eastern seaboard; manufacturing industrial soaps; modern building with railroad siding. Good will and trade brands included in sale. Firm in business for ninety years. For further details communicate with Box No. 429, care *Soap.*

Volcanic Ash of all colors and grades; samples and prices upon request. Mid-Co. Products Company, Kansas City, Missouri.

Non-Skid No-Rubbing Wax—A remarkable product. A large board of education reported it less slippery than any other wax. A national chain of stores had it approved by their insurance company. Sample it yourself. Low prices. Twi-Laq Chemial Co., 221 Sullivan St., Brooklyn, N. Y.

Floor Brushes—We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Co., Los Angeles, Calif.

Complete Soap Plant Equipment for Sale: Proctor soap chip dryer; automatic soap press; wrapping machine: 4 roll stone mills; foot press; plodders 6", 8", 10"; soap boiling kettles; 6 knife chipper; two-way cutting table; frames; filter presses; crutchers; mixers, boilers. Stein Equipment Corp., 426 Broome St., New York City.

Soap Jobber—New York jobber in position to handle cheap laundry and facial soaps. Can use either close-outs, damaged or regular run merchandise. Address Box No. 430, care *Soap.*

We announce development of new type soap colors

PYLAKLORS

They have good fastness to alkali, light, tin, ageing.

The following shades are already available:

Bright Green	Dark Brown
Olive Green	Palm Green
Yellow	Golden Brown
True Blue	Violet

It will pay you to send for testing samples.

PYLAM PRODUCTS CO., INC.

Manufacturing Chemists, Importers, Exporters

799 Greenwich St. New York City

Cable Address: "Pylamco"

T. G. COOPER & CO.

INC.

47 North Second Street

Philadelphia

•

Import and Spot Lots of

Cresylic Acid
Commercial Olive Oil
Olive Oil Foots
Palm Oil
Castor Oil
Rapeseed Oil
Japan Wax
Carnauba Wax
Carbonate of Potash
Bicarbonate of Potash
S. American Vegetable Oils and Oil-Bearing Nuts

Raw Material and Equipment Guide

(*Continued from page* 124)

NOTE: This is a classified list of the companies which advertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index to Advertisements, on page 128 for page numbers. *"Say you saw it in SOAP."*

MACHINERY

J. H. Day Co. (Mixers, Sifters, Mills)
Anthony J. Fries (Soap Dies)
Houchin Machinery Co. (Soap Machinery)
Huber Machine Co. (Soap Machinery)
Ingersoll Steel & Disc. Div. Borg-Warner Corp.
International Nickel Co. (Monel Metal)
R. A. Jones & Co. (Automatic Soap Presses and Cartoning Machinery)
Koppers Company (Coal Tar Plants, Power Plants, Valves, Castings, Pipe, Tanks)
Proctor & Schwartz (Dryers)
C. G. Sargent's Sons Corp. (Dryers)
Sprout, Waldron & Co. (Mixing, Conveying, etc)
Stokes & Smith Co. (Packing Machinery)
Viking Pump Co. (Pumps)
Wurster & Sanger (Soap, Oil and Glycerin)

MACHINERY, USED

Consolidated Products Co.
Newman Tallow & Soap Machinery Co.

MISCELLANEOUS

American Standard Mfg. Co. (Wax Applicator)
Anchor-Hocking Glass Corp. (Metal Caps)
T. G. Cooper & Co. (Waxes)
Dicalite Co. (Insecticide Carrier, Filtering Materials, Abrasives)
Dobbins Mfg. Co. (Pails, Mop Wringers, etc.)
Hercules Powder Co. (Pine Oil and Rosin)
Industrial Chemical Sales Div. (Decol. carbon, Chalk)
Innis, Speiden & Co. (Fumigants and Waxes)
Koppers Company (Coal, Coke, Roofing Materials)
Lenape Trading Co. (Waxes)
Pylam Products Co. (Lathering Agent)
S. Schwabacher & Co. (Naphthenic Soaps, White Mineral Oils)
Victoria Paper Mills Co. (Paper Accessories)

OILS AND FATS

T. G. Cooper & Co.
Eastern Industries
Independent Mfg. Co.
Industrial Chemical Sales Div.
Leghorn Trading Co.
Murray Oil Products Co.
Newman Tallow & Soap Machinery Co.
Orbis Products Corp. (Stearic Acid)
E. M. Sergeant Pulp & Chemical Co.
Wecoline Products Co.
Welch, Holme & Clark Co.

PARADICHLORBENZENE

John A. Chew, Inc.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Hooker Electrochemical Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.

PERFUMING COMPOUNDS

Aromatic Products, Inc.
Compagnie Parento
Dodge & Olcott Co.
P. R. Dreyer Inc.
Felton Chemical Corp.
Firmenich & Co.
Fritzsche Brothers, Inc.
General Drug Co.
Givaudan-Delawanna, Inc.
Magnus, Mabee & Reynard, Inc.
Norda Essential Oil & Chemical Co.
Orbis Products Corp.
Schimmel & Co.
Ungerer & Co.
Van Ameringen-Haebler, Inc.

PETROLEUM PRODUCTS

Atlantic Refining Co.
O'Connor & Kremp
S. Schwabacher & Co.
L. Sonneborn Sons.

PYRETHRUM AND DERRIS PRODUCTS

Insect Flowers and Powder, Pyrethrum Extract, Derris Products

Associated Chemists, Inc.
Derris, Inc.
Hammond Paint & Chem. Co.
Lenape Trading Co.
S. B. Penick & Co.
R. J. Prentiss & Co.
McCormick & Co.
McLaughlin, Gormley, King Co.
John Powell & Co.

SILICATES

Cowles Detergent Co.
E. I. du Pont de Nemours & Co.
Philadelphia Quartz Co.
Standard Silicate Co.

SOAP DISPENSERS

Bobrick Mfg. Co.
Clifton Chemical Co.
Fuld Bros.
Presto Mfg. Co.

SPRAYERS

Breuer Electric Mfg. Co.
Dobbins Mfg. Co.
Fumeral Co.
Lowell Manufacturing Co.
Universal Metal Products Co.

TRI SODIUM PHOSPHATE

John A. Chew, Inc.
E. I. du Pont de Nemours & Co.
Monsanto Chemical Works
Victor Chemical Works
Warner Chemical Co.

Professional Directory

Pease Laboratories, Inc.
Est. 1904
39 West 38th Street — New York

Chemical, Bacteriological and Pathological Testing and Research. Special Animal Investigations of Pharmacologic, Toxic or Skin Irritating Properties.

H. A. SEIL, Ph.D — E. B. PUTT, Ph.C., B.Sc.
SEIL, PUTT & RUSBY, INC.
Analytical and Consulting Chemists
Specialists in the Analysis of Pyrethrum Flowers, Derris Root, Barbasco, or Cube Root—Their Concentrates and Finished Preparations
ESSENTIAL OILS — SOAP
16 East 34th Street, New York, N. Y.

STILLWELL AND GLADDING, Inc.
Analytical and Consulting Chemists
Members Association of
Consulting Chemists and Chemical Engineers
130 Cedar Street — New York City

SOAPS — DETERGENTS
Analyses *Development*
Consultation *Formulas*
HochstadterLaboratories
INCORPORATED
254 West 31st St. — New York City

KILLING
strength of Insecticides
by PEET GRADY METHOD
(Official I. & D. code method) and
PYRETHRINS in PYRETHRUM FLOWERS
(by Gnadinger's Method)
We raised and killed more than 1 million flies in the last 2 years
ILLINOIS CHEMICAL LABORATORIES, INC.
5235 WEST 65th STREET — CHICAGO, ILL.

FOSTER D. SNELL, INC.
Chemists—Engineers
Every form of Chemical Service
305 WASHINGTON STREET — BROOKLYN, N. Y.

CONSULTANTS
offering their services to manufacturers of soaps and sanitary specialties should apprise the industry of their facilities through this professional card department. SOAP reaches 4,000 firms needing help of a professional nature.

Patents—Trade Marks
All cases submitted given personal attention.
Form "Evidence of Conception" with instructions for use and "Schedule of Government and Attorneys' Fees"—Free
Lancaster, Allwine & Rommel
PATENT LAW OFFICES
Suite 402, Bowen Building — Washington, D. C.

Skinner & Sherman, Inc.
246 Stuart Street, Boston, Mass.
Bacteriologists and Chemists
Disinfectants tested for germicidal value or phenol co efficient by any of the recognized methods.
Research—Analyses—Tests

Refer To Your New 1938

SOAP BLUE BOOK

for F.D.A. Method for Testing of Disinfectants and Antiseptics.

Official N.A.I.D.M. Method for Testing and Grading of Insecticides.

Free with a $3.00 subscription to SOAP.

MAC NAIR-DORLAND CO.
Publishers
254 W. 31st Street — New York, N. Y.

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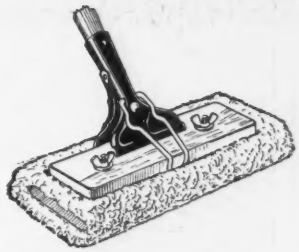
Every effort is made to keep this index free of errors, but no responsibility is assumed for any omission.

SIMPLEX DUST MOP — HOLZ-EM WAX APPLICATOR

The SIMPLEX is the newest, most practical and economical thing in dust mops—a strong unified wire frame with a swivel handle and *a mop that comes off to wash.* Available in several sizes.

The HOLZ-EM has long been acknowledged as the best for applying and spreading liquid wax, varnish, seals and other floor finishes. Sheep wool pads are washable and easily replaced.



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Do your salesmen get a blank stare when they mention the name of your company in calling on new customers? Or have most buyers and prospective buyers become familiar with your firm name and the goods which you sell as a result of reading your advertising in the trade papers? Trade paper advertising can do more than get you inquiries for your products. It can pave the way for your salesmen by making your firm name and your goods better known to buyers *in advance* of the salesman's visit. And, believe me, to be known, is a big help in selling!

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Member of the A.B.C. and A.B.P.

Tale Ends

ARE shaving soap and shaving cream to be doomed eventually by the electric razor? Judging from the ever increasing advertising of these miniature mowing machines,—and from the number of them which we have seen presented as prizes, gifts, etc., they have assumed an increasingly important position in the field of hair removal. But, we believe, they are for the city slickers. The fellow with horny hands out on the farm is going to continue to slice and carve himself before the cracked mirror over the kitchen sink for many a moon to come whether he uses the open razor which belonged to his grandfather or a new shiny two-bit safety.

Over ten million dollars are being spent in the U. S. during 1938 on radio advertising for soap,—a big jump over 1937 and the years before. A lot of money! In fact, it is more than twice the annual bill for soap for the whole of China and its three hundred million odd people.

Remember the ads: "They laughed when I sat down at the piano" . . . ? Not to mention the fact that they went into convulsions when I started to play . . . but that's beside the question. The point which we went to make is that if you have received a *Soap* subscription renewal notice, avoid the piano. Sit down at your desk instead and write out a check for three dollars and send it in to us. Thus, you will be sure not to miss any issues of *Soap*.

Here is an idea which may save you three cents and us three cents. If you use air-mail, you save six cents. Before sitting down to write us a letter about where to buy this or that, or where to find this information, or what time it is in China, . . . look through your 1938 BLUE BOOK. You will probably find it there, . . . but if not, . . . then write to us. But, try your BLUE BOOK first.